

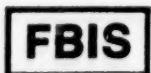
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USSR Report

NATIONAL ECONOMY



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8 JANUARY 1987

USSR REPORT

NATIONAL ECONOMY

CONTENTS

AGRICULTURE

AGRO-ECONOMICS, POLICY, ORGANIZATION

Union Council of Kolkhozes Chairman Interviewed (I. I. Kukhar Interview; SELSKAYA ZHIZN, 24 Oct 86)	1
--	---

REGIONAL DEVELOPMENT

AGROPROM in Ukraine in Light of Impending Restructuring (V. Serhiychuk; SILSKI VISTI, 6 Nov 86)	6
--	---

TILLING, CROPPING TECHNOLOGY

Impact of Intensive Technology in Stavropol Kray (L. Petrova; SELSKIYE ZORI, No 10, Oct 86)	9
--	---

Briefs

Wheat Sowings Expanded	14
Grain Obligations Fulfilled	14
Stavropol Kray Field Work	14

TRANSPORTATION

MOTOR VEHICLES, HIGHWAYS

Official Urges More Public Filling Stations in Rural Areas (V. Pomogayev; SOVETSKAYA ROSSIYA, 15 Aug 86)	15
Gosplan Official on Natural Gas-Powered Vehicle Development (A. Lokhov; AVTOMOBILNYY TRANSPORT, No 9, Sep 86)	17

Factors Keeping Truck Train Use at Inadequate Level (I. Abakumov, et al.; IZVESTIYA, 26 Sep 86)	24
Various Obstacles Hinder Motor Vehicle Harvest Support (I. Totskiy; PRAVDA, 5 Sep 86)	28
Improving Motor Vehicle Harvest Support in Urals Area (URALSKIYE NIVY, No 9, Sep 86)	31
Designer Explains Improvements in UAZ Vehicles (A. Vinokurov; ZA RULEM, No 9, Sep 86)	35
Improvements in Tula Motor Scooters Outlined (V. Pudoveyev, Yu. Pozdnyakov; ZA RULEM, No 9, Sep 86)	39
Briefs	
Cheboksary Area Highway Construction	42
New Bridge in Krasnoyarsk	42
Larger Capacity Fuel Tankers	42
Chernigov Bridge, Highway Construction	43
Frunze Assembly Plant Scored	43
10 Millionth Zhiguli Produced	43
Ustinov-Glazov Highway Opens	44
Millionth Ural Truck Produced	44

RAIL SYSTEMS

Briefs	
Kuybyshev Metro Construction Progress	45
Second Kharkov Metro	45
Dnepropetrovsk Metro Construction Update	45
Leningrad Metro Video Monitoring	46
Automated Traffic Control Systems	46
Enclosed Bilevel Rack Carrier Tested	46
Poti-Burgas Rail Ferry	47
New Tengiz Rail Line	47
Znamenka-Dolinskaya Line Electrified	47
Zhdanov, Yasinovataya Divisions Merged	47
Moscow Railroad Stations Merged	47
New Sverdlovsk Railroad Station	48
New BAM Freight Station	48
Moscow Passenger Stop Renamed	48
New Code for Junction	48
Western Siberian Station Opens	48
Sverdlovsk Passenger Stop Opens	48

MARITIME AND RIVER FLEETS

MOD Official on Leningrad Channel Navigational Safety (Ye. Gnitsevich; MORSKOY FLOT, No 8, Aug 86)	49
Chief on Soviet Danube Shipping Company Work (Viktor Pilipenko Interview; RABOCHAYA GAZETA, 14 Sep 86).	54

New Vessels for Novaya Ladoga Fleet (Ye. Tarasova; VODNYY TRANSPORT, 1 Nov 86)	58
Maritime Fleet Lacking Anticorrosive Paints (V. Bezuglyy; VODNYY TRANSPORT, 1 Nov 86)	59
Lighter Operating Problems in Far North (V. Shirmanov; VODNYY TRANSPORT, 6 Nov 86)	63
Plans for 'Moruslugi' Umbrella Port Services Organization (M. Robkanov; VODNYY TRANSPORT, 23 Sep 86)	66
Maritime Fleet Navigation, Commo Equipment Faulted (V. Vorontsov; VODNYY TRANSPORT, 23 Sep 86)	69
Briefs	
New Ro-Ro Truskavets	71
Baku Shipyard Expansion	71
Northern Shippers Receive Icebreakers	71
New Bulgarian-Built Tanker	71
New Ro-Ro Kompozitor Rakhmaninov	72
New Ro-Ro Akademik Gorbunov	72
Estonian Icebreaker Ferry	72
Finnish-Built Cable Layer	72
Volga River-Sea Ship Trials	73
Multipurpose Ship Grigoriy Kozintsev	73
Caspian Ferry Sovetskaya Nakhichevan	73
Ore Carrier Boris Gordeyev	73

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AGRO-ECONOMICS, POLICY, ORGANIZATION

UNION COUNCIL OF KOLKHOZES CHAIRMAN INTERVIEWED

Moscow SELSKAYA ZHIZN in Russian 24 Oct 86 p 2

[Interview with I.I. Kukhar, chairman, Union Council of Kolkhozes and chairman, Suburban Moscow Kolkhoz imeni Vladimir Ilich, by A. Morgachev: "Kolkhozes at the Acceleration Stage"; date and place of interview not given; first paragraph is SELSKAYA ZHIZN introduction]

[Text] As we have already reported, the All-Union Congress of Kolkhoz Soviet Representatives will take place in early December. For two days, delegates from republic, kray, oblast and rayon soviets will be meeting in Moscow to discuss kolkhoz construction tasks arising from the resolutions of the 27th CPSU Congress. At the request of SELSKAYA ZHIZN, I.I. Kukhar, chairman of the Union Council of Kolkhozes and the Suburban Moscow Kolkhoz imeni Vladimir Ilich, tells us about the upcoming event, and about the problems of collective farm management under conditions of reorganization within the nation's agro-industrial complex.

[Morgachev] Ivan Ivanovich, what made it necessary to convene an All-Union Congress of Kolkhoz Soviet Representatives?

[Kukhar] The need for this congress was dictated by statutory requirements on the one hand, and on the other--by life itself. In the first place, the 27th CPSU Congress has included reliable provision of food to the nation among its most important tasks. We must attain this by intensifying production, implementing intensive production technologies on a wide scale, restructuring management, improving economic mechanisms, and exploiting available production and scientific potentials to the maximum.

At the present time, kolkhoz soviets are made up of 81,000 of the top representatives of kolkhoz peasantry, experienced kolkhoz chairmen and specialists, as well as leading mechanization specialists and stock breeders. And it is their delegates we are electing to the council in order to map out collectively a practical course for future progress.

Kolkhoz soviets cannot fail to be disturbed by the fact that we entered the 12th Five-Year Plan with alarming indicators. Almost 13 percent of all kolkhozes were unprofitable. Many of them did not increase their grain or livestock production growth rates. We, for example, have calculated that at that time 7,000 kolkhozes were each producing 2,000 kg of milk a year per cow.

Of course, with rates such as these acceleration is impossible, and now it is important to analyze the start kolkhozes have made during the first year of the 12th Five-Year Plan, and to bring to light the reasons for the successes of some and the errors of others.

Experience has also demonstrated the need to expand kolkhoz democracy and extend the democratic principles of kolkhoz management. The Political Report of the 27th CPSU Congress Central Committee points to the fact that kolkhozes are far from exhausting their capabilities in terms of socialist production and greater satisfaction of the needs of the people. It is common knowledge that kolkhoz self-government and administration are incompatible concepts. But it is no secret that too many have interfered, and continue to interfere in the affairs of cooperative organizations. Thus in a number of regions in the country, RAPOs and their balance commissions direct, place demands on, and even punish managers and specialists without the knowledge of kolkhoz farmers or management. These and other facts would indicate that it is time to start really putting democratic forms of management into practice. We must all learn to live in conditions of widespread democracy.

And in general, it has been 17 years since the Third All-Union Congress of Kolkhoz Workers. During those years, cooperative farms and kolkhoz peasants themselves have changed. The physical and legal bases for kolkhoz democracy have expanded, work conditions have improved, and new forms of work organization and remuneration have arisen. There have been definite achievements in terms of rural social development and strengthening of rural material foundations. But the returns from the production potential have lagged behind its growth....

During the last few years aid to kolkhoz farmers wishing to raise their qualifications and obtain specializations at the expense of farms has increased. But personnel problems and the problem of staff training quality remain severe. The same is true of private subsidiary farms. The consideration given to them could be increased in a similar way. But last year, Estonian farms purchased 3 1/2 tons of milk from each privately-owned cow; Ukrainian and Kazakhstan farms did not even collect half a ton.

All this requires immediate consideration, because more and more often, at meetings of our Union Council and in letters from kolkhoz farmers, questions are being put to us that are not reflected in the Kolkhoz Exemplary By-Laws currently in force.

[Morgachev] When was the last time additions and changes were made to the By-Laws?

[Kukhar] That was done in March 1986. But it is not just a question of the By-Laws. There is more. Under present conditions, when the course of reorganization is being affected by many things and it is difficult to give up many old habits and outdated methods right away, the need has also arisen to revise the statute pertaining to kolkhoz soviets. Thus suggestions are currently being raised at meetings of local soviets calling for an expansion of the laws governing these public self-managing bodies. In some places people have started forgetting that a kolkhoz is not a government institutions, but a cooperative organization of peasants who have joined together of their own free will in order to run a farm together. This association decides what to buy, what to build, how best to sell goods produced over and above the plan, as well as what to do with profits. In practice it turns out, however, that a kolkhoz cannot even spend its own money as it pleases. Kolkhoz farmers complain to us: There are so many millions of free rubles in the bank, and we cannot put them into circulation. They will not give them to us. "Why?" "And who allowed this?" Not only does this undermine the most important principle of kolkhoz democracy, but it also spoils the kolkhoz farmers' taste for their collective savings, and destroys their desire to count their own pennies.

[Morgachev] You will agree, Ivan Ivanovich, that the role of the kolkhoz soviets has weakened in recent years. Apparently that is also why certain doubts now arise: Can the interests of the RAPO council coexist with those of the Council of Kolkhozes?

[Kukhar] I think these doubts have no foundation. The RAPO council and the Council of Kolkhozes are two completely different institutions. In creating it, the Third All-Union Congress of Kolkhoz Workers assumed that the two councils would help bring about further development in kolkhoz democracy, collective discussion of the most important issues in kolkhozes life, and dissemination of advanced practices. Part of the task of the councils also includes monitoring the observance of state discipline and controlling efforts to violate the Kolkhoz By-Laws.

To tell the truth, the work of the soviets has weakened in some places as a result of the creation of new organizations for managing the agro-industrial complex. In certain rayons of Kirghizia and a number of RSFSR oblasts, kolkhoz soviets have even stopped meeting, having assumed that the RAPO had swallowed up their function. This is completely untrue. The activity of our soviets consists not only of carrying out certain specific measures and conducting campaigns. They are called upon to protect and increase kolkhoz property. This work is multifaceted and laborious, and no one can do it better than the kolkhoz representatives themselves.

I said earlier that the milk yields in a number of kolkhozes were low. And yet we have farms which produce 5,500 liters of milk per cow. What is more, each cow brings in 1,000 rubles of profit per year. Couldn't the oblast council have disseminated this experience everywhere, and then made strict demands that kolkhozes put it into practice?

Or take such an important issue as changing to progressive work organization methods. At one time, the Kolkhoz imeni Ilich Dobrinskiy in a rayon in the Lipetskiy Oblast began the practice of cultivating sugar beets using an industrial-scale production technology. The initiators of this move, the Sinyachkin Brothers, mechanization specialists, were awarded the USSR State Prize. The oblast council of kolkhozes carefully analyzed the experiment and disseminated it; the results were not slow in coming. For the third year in a row now, farms in the oblast have fulfilled their plan of beet sales to the state, though for the past 16 years, the task seemed beyond their capabilities. What is more, cultivation on the beet fields started here within 10-15 days.

Not long ago our Union Council of Kolkhozes analyzed the benefits kolkhozes derive from new forms of work organization. Let us take the implementation of the flow-line/workshop system in livestock farming. It turns out that the application of this form of work organization alone makes it possible to increase the productivity of a milker by 200-300 kg of milk per year. So why doesn't some rayon council of kolhozes get together and ask the question point-blank: "Men, are we no better than the others?" The council exists and goes by that name because from time to time the need arises for those who are most experienced to meet, consult with each other or give advice to someone.

Now we watch as our young kolkhoz management chairmen play havoc with our work. Almost 1,100 of them have been elected this time. It is a significant influx of new forces. But in a number of cases they lack experience. Here too the kolkhoz soviets can offer them truly invaluable help.

In a word, the times demand that we change the style and methods of kolkhoz management radically. The task involves changing the forms of kolkhoz production management to bring them in line with its content, to combine centralized leadership with the advantages of kolkhoz democracy.

[Morgachev] Ivan Ivanovich, which of the processes taking place today on the rural scene disturbs you most? Obviously, you will be speaking about these things at the All-Union Congress?

[Kukhar] When you have devoted as many years to rural problems and the kolkhoz movement as I have, then naturally there are many, many things that disturb you. I cannot begin to mention everything. For example, I am disturbed by the parasitic attitude among certain managers and middle team specialists. "Give me this, bring me that, send in foremen from the city, give us loans..." Now how can you manage affairs like that?

I believe we must adopt forms of self-financing and self-support as quickly as possible. Then there would not be any of those carefree parasites who sit peacefully in their offices, not the least bit upset about whether or not anything is being produced--after all, they will be paid regardless. Then the kolkhoz farmers will behave differently too. I can remember times during

meetings when anyone who used too much solar oil or lost the kolkhoz bridle would be thoroughly reprimanded. And rightly so--it was public money that was being lost. Now they tell us that during last year's harvest 22,000 people committed theft in kolkhozes. Is this not cause for reflection, for serious concern about kolkhoz soviets?

Or let us take another example--membership in the kolkhoz. How much formality is there here, and how much criminal unconcern? They say once there is a shortage of hands, all you have to do to be accepted is put in an application. They voted according to the list, and that is the end of the matter. Isn't it time we revived the beautiful tradition that existed before and just after the war, when new members were accepted into the kolkhoz at general meetings, in front of everyone, where every villager had a chance to ask: Who are you? Whose son are you? Will you work hard? Where will you live? And membership in the kolkhoz should be denied in front of everyone too....

Kolkhoz soviets still have much to do by way of increasing soil fertility, and implementing intensive plant cultivation and livestock breeding technologies. The problems of rural social transformation loom before us. With the creation of Gosagroprom, additional new construction possibilities have arisen based on the unification of state and cooperative-kolkhoz forms of ownership. Here too, the soviets have much to do. And are there not also many questions concerning the possibility of selling some of what is produced at kolkhoz markets, or the development of private subsidiary farms?

In short, like life itself, the field of activities for kolkhoz soviets is multifaceted. And of course, these vital questions will be reflected in the work of the All-Union Congress of Representatives of Kolkhoz Soviets.

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REGIONAL DEVELOPMENT

AGROPROM IN UKRAINE IN LIGHT OF IMPENDING RESTRUCTURING

Kiev SILSKI VISTI in Ukrainian 6 Nov 86 p 3

[Article by V. Serhiychuk under the rubric "Before the Session of the UkSSR Council of Ministers": "AGROPROM in the Light of Restructuring"]

[Text] Yosip Semenovych Parubochy, head of the collective farm imeni Ya. Halana in the Radekhovskiy Rayon of the Lvov Oblast, and Vasyl Musiyovich Hurtovy, head of the collective farm imeni Lenin in the Znamyanskiy Rayon of the Kirovograd Oblast, were perhaps the most active participants at a recent session of the prepared commission on the agro-industrial complex [APK] of the UkSSR Council of Ministers; meetings were held daily. The two men, who directed the bulk of their questions to Chief Deputy of Derzhplan [State Plan] of the UkSSR V.P. Popov, Chief Deputy of the UkSSR Derzhagroprom [State Agro-Industry] O.H. Denysenko, and to the heads of other republic ministries and departments, alluded to the existing discord among the various links (at least for now) and submitted their proposals concerning the improvement of the entire farming mechanism in the APK system. And naturally since both of them are well aware of the problems of agricultural production, they are expected to be the first to offer solutions; furthermore, they should endeavor at all times to improve the well-being of all farmers, livestock breeders, and everyone who makes an effort to fulfill his obligations concerning the Food Program.

How is the program being carried out in our republic for this year?

Having analyzed the indexes given for the fulfillment of the 9-month plan, the deputies made note of the fact that in light of the impending restructuring of APK branches there is the need to improve administrative control, ensure the stability of production, increase the volume of procurement of grain and industrial crops, and raise the level of fruit and vegetable production, as well as livestock raising.

According to previous data, grain yields as compared with last year increased 2.2 centners per hectare; whereas the gross yield saw an increase of 2.8 million tons (not including corn). High grain output was maintained in the Transcarpathian, Chernovtsy, Ternopol, and Ivano-Frankovsk oblasts. Members of the prepared commission stressed that these kinds of output indexes were obtained in large part due to the widespread implementation of intensive technology in the cultivation of grain crops. For example, winter wheat yields on

the whole for the republic in these areas stood at 38.4 centners, which is 14 centners more than would be obtained under non-intensive technology.

There was an increase in grain purchases, especially for hard, premium wheat. The state plan for grain sale was carried out by various farms in 14 different oblasts throughout the republic. At the receiving centers more vegetables, potatoes, fruit, and berries were being brought in. In reference to the 9-month state plan of sales meat has been fulfilled at 107 percent; milk, 104.2; and eggs, 109.8. In keeping with the yearly plan farms throughout the republic attained the realization of wool. Milk output from a single cow increased by 93 kilograms in contrast to last year at this same time; egg output from a single hen increased by nine eggs more than previously; and in the fattening of livestock there was an average daily increase in weight of both cattle and hogs.

At the same time the deputies underscored the fact that in many of the collective and state farms measures aimed at stabilizing the development of agricultural production have not been successfully put into practice. Yields from grain and industrial crops remain at a low standard; in addition, livestock raising is lagging behind. Measures regarding the intensification of grain farming, for instance, have been slow to be put into effect; the potentialities of progressive technology have not been used to one's advantage. The harvest of winter wheat was not what was expected in collective and state farms in the Chernigov, Kharkov, Poltava, Kirovograd, Dnepropetrovsk, and Voroshilovgrad oblasts due to the following factors: optimal dates for soil preparation and sowing had been violated; due to the poor quality of work farmers failed to implement effective control measures against pests, diseases, and weeds according to schedule; they violated dates for the application of fertilizer and administered improper dosages. And in the Crimean, Poltava, Odessa, and Dnepropetrovsk oblasts, as a result of the improper utilization of fallows, grain yields in these areas were reduced by 1.3-1.7 times as compared with the output target.

Not all is running smoothly in the area of livestock raising either. As a whole the 9-month state output plan has been overfulfilled in the production of cattle and fowl. However, in the Khmelnytskyi Oblast 41 percent of the farms have not attained output targets; in the Sumy Oblast, 38 percent; in the Kherson Oblast, 35 percent; and in the Nikolayev Oblast, 33 percent. There is a problem with milk production. Forty-seven percent of the collective and state farms in the Kirovograd Oblast have failed to attain their targets; in the Vinnitsa Oblast, 42 percent; Cherkassy, 37 percent; Poltava, 31.

The deputies analyzed all angles of the work being performed at the enterprises of food supply industries. And although the 9-month output and realization plan has been overfulfilled for most types of productions, certain enterprise branches are allowing abnormal amounts of raw material to be wasted, not making effective use of meat-dairy resources and raw sugar.

There are many pitfalls in the work of the builders of the UkSSR Minvodhosp [Ministry of Artificial Methods of Farming]. They've not been able to

determine how much of the 9.2 million dollars allocated is needed for production. Consequently, they have not developed according to schedule the lands under irrigation (in the Kharkov and Vinnitsa oblasts, for example, nearly 2.5 thousand hectares), and habitations.

The tributary organizations of Derzhagroprom within the republic have also placed themselves in a precarious position. They failed to provide the following: adequate livestock housing and feed stalls; plants for the manufacture of canned fruits and vegetables; pre-school establishments; clubs and cultural establishments; bath-houses and other facilities. Circumstances were especially unfavorable in the collective farms of the Volyn, Ivan-Frankovsk, Khmelnytskyi, and Cherkassy oblasts.

In order to expect success in fulfilling plans for the coming year (that is as long as all links perform precision work and maintain consistency in their actions), the deputies of the UkSSR Council of Ministries V.S. Moroz, H.Y. Kuzyk, and A.D. Kovalenko stressed the importance of observing the following: widespread application of intensive factors toward the development of APK branches on the basis of accelerated scientific-technical progress; restructuring and amending administrative control; more efficient utilization of scientific-industrial potential; universal implementation of cost accounting; contract work for brigades; and employing up-to-date economic methods of farm management. These tasks are strenuous. Thus, industrial gross output of the agricultural production complex is being projected toward a sum of 99.9 milliard dollars, which is 1.8 percent more than this year. There are plans now to expand areas for crop cultivation by means of intensive technology, especially grains--up to 7 million hectares; sugar beets--1.5 million hectares; and sunflowers--1 million hectares. Rotation crops will include new varieties and hybrids; zonal well-founded, scientific systems of crop raising will be introduced. We will see more efficient utilization of reclaimable land.

To attain the planned indexes for livestock raising, the following is proposed: a strong feed base and 108 million ton-capacity feed units. Owing to this, it would then be possible to increase meat production (slaughter weight) by 5.5 percent, milk output by 1.6 percent, and egg output by 0.6 percent.

Plans for the preparation of industrial food-supply production were revised to favor a reduction of the indexes for the 5-year plan on the whole by a sum of 304 million dollars; the deputies, however, disapproved of the plan and insisted that the UkSSR Derzhagroprom study the problem so that questions dealing with the Food Program might be viewed in full context. In particular, plans have been laid out to include widespread implementation of those methods that would permit further development of the entire complex of food processing, utilizing technology that allows little or virtually no waste to occur. It is also important to continue work in changing the profile of alcohol, liquor-whiskey, and wine-producing enterprises in the manufacture of their products, taking advantage of high demands.

The prepared commission on the agro-industrial complex submitted its revisions and proposals for 1987 to the State Plan of Economic and social Development of the UkSSR, as well as to the UkSSR State Budget.

IMPACT OF INTENSIVE TECHNOLOGY IN STAVROPOL KRAY

Krasnodar SELSKIYE ZORI in Russian No 10, Oct 86 pp 13-14

/Article by L. Petrova, general director of Niva Stavropolya Scientific-Production Association: "A System Plus Search"/

/Text/ The intensive technology has earned a place out on the fields in Stavropol Kray. This year winter wheat will be cultivated using this technology on almost 900,000 hectares -- more than one half of the grain fields.

Experience accumulated in the past has made it possible to develop this technology truly on a scientific basis and to avoid many mistakes and derelictions.

What guidance were we provided with and what were the chief considerations this year?

First of all, the intensive technology is being introduced in keeping with the need for mastering the systems of farming and the systems for agricultural management and in conformity with a high level of requirements for the culture of farming on the whole.

Secondly, similar to any other technology, this one is strictly zonal in nature, even within the borders of the kray. All of our recommendations were developed taking into account the availability of soil moisture. In behalf of this year's harvest, the sowings for the intensive technology were carried out in rayons characterized by more moisture. In the extremely dry zone, the moderate intensive fallow technology is being employed.

Thirdly, intensive sowings are being carried out not only following fallow but also following other predecessor crop arrangements.

Fourthly, thorough knowledge of the features of the technology and hence continuous instruction for all categories of specialists is considered to be mandatory. In each rayon, we have a brigade of scientists who are constantly furnishing assistance at the sites.

Fifthly, a need exists for thorough conviction that intensification is not only a technological problem but an economic one as well. Under operating conditions predicated upon self-repayment principles, every technological element must be

employed in a creative manner, with full consideration being given to the need for achieving high economic results.

All of the above and also a tremendous amount of organizational work served to ensure high results. Under conditions involving extremely unfavorable weather and drought conditions, especially in the eastern regions, the kray nevertheless succeeded in obtaining the highest yield in the history of farming: 27.7 quintals per hectare. Roughly 2,100,000 tons of grain were sold to the state against a plan which called for only 1,900,000 tons. Almost all of the winter wheat -- 96 percent -- was classified as being of strong or valuable quality.

The intensive fields furnished 31.2 quintals of grain per hectare. Compared to conventional sowings, the increase was 9.6 quintals. It fluctuated by zones from 1.9 to 10 quintals in the extremely dry zone to 8 to 17 quintals in the remaining zones. Dozens of farms obtained 48-54 quintals of excellent grain per hectare over large areas.

What accounted for the increase in yield? Analysis has shown that 73-75 percent of it resulted from fertilization and good predecessor crop arrangements and the remainder -- from soil cultivation and prophylactic work carried out with seed and herbicides.

The intensive technology uniquely illuminated the problem of winter wheat quality. We cannot agree with the claim that it automatically guarantees that strong grain will be obtained. Valuable grain -- yes. But the situation is more complicated in the case of strong grain. Here there is a need for carrying out a specially developed complex of measures of both a biological and organizational nature.

We are well aware of and are implementing an indisputable truth: valuable wheat is good and yet strong wheat is strong and has no substitute. The kray's trademark must be not simply good wheat but rather strong wheat. Thus, within the framework for intensive technologies, we employ a year-round program for controlling quality. Special kray and rayon operational groups have been created which organize and direct all work concerned with strong wheat. The result of this work -- approximately 900,000 tons of strong wheat: 47 percent of the 96 percent mentioned above. The production plan for this wheat was exceeded by a factor of 1.5.

The farmers in Apanasenkovskiy, Neftekumskiy, Novoaleksandrovskiy and Trunovskiy rayons delivered all of their grain in accordance with the standards for strong and valuable grain. In Kochubeyevskiy Rayon, 93 percent of the grain delivered to the elevators was strong grain, in Kirovskiy Rayon -- 69, in Petrovskiy Rayon -- 68 and in Sovetskii Rayon -- 65 percent.

These are good results and yet we are still not satisfied with them. We want better results and we are working persistently and purposefully in this regard.

There are both objective and subjective factors which are making it difficult to obtain more strong grain. Here are the conclusions which we reached following thorough analysis.

The quality is determined by three main conditions: the genetic characteristics of the variety, weather during the period following blossoming and nourishment.

All of the varieties regionalized in the kray apply to the strong type and are capable of furnishing strong grain. At the same time, Bezostaya-1 continues to be the best variety. Donskaya Bezostaya furnishes good flour. Unfortunately, the remaining varieties differ substantially in terms of strength depending upon the weather.

It is noted that the varieties respond differently to foliar nitrogen top dressings and this may be attributable to their genetic characteristics. Many of them lose quality during drought conditions. Tarasovskaya-29 often forms a gluten that is too hard. Donskaya Bezostaya has proven to be quite good this year and yet its plants are inclined towards the shattering of the grain. Thus special attention must be given to the sowings of this variety with regard to the harvest periods and methods: tardiness cannot be tolerated and the harvest must be carried out using direct combining. In other words, a differentiated approach is needed for the varieties.

The weather conditions during the grain formation period have a substantial effect on the quality of the grain. The drier the climate, the stronger the flour. It is by no means an accident that our eastern regions (zones I and II) supply 70 percent of all of the strong grain. However, in the absence of fallow it is impossible to obtain strong grain in these regions: it may pass this standard in terms of the quantity and concentration of gluten in the grain, but it does not always support other indicators, particularly volume weight. Consequently, only fallow can be viewed as a guaranteed predecessor crop arrangement for strong grain in arid and extremely arid regions. Thus, this year 68 percent of the strong grain was obtained from the first and second zones, where the principal fallow areas are located.

The intensive technology is opening up great opportunities for carrying out strong wheat work in damper regions. In addition to plant nourishment, it is obviously important under such conditions to select the correct harvesting method. Since sowings carried out using the intensive technology are clean, they must be harvested directly. Large losses are being sustained in those regions which continue to rely upon two-stage harvesting operations.

Precipitation which occurs during the harvesting period lowers the quality of the grain substantially. In those areas where rain occurs during the harvest period (from 40 to 60 millimeters in Krasnogvardeyskiy, Blagodarnenskiy, Izobilnenskiy, Novoselitskiy and Shpakovski rayons), only 14-31 percent of the wheat was of the strong variety. These rayons produced mainly strong grain prior to the onset of the precipitation.

During the course of work carried out in connection with the intensive technology, we obtained convincing confirmation of the effect of plant nourishment on the quality of grain. The chief conclusion: the requirement of wheat not only for nitrogen but also for phosphorus must be satisfied fully. A cold, prolonged and dry spring period and sharp temperature changes at the beginning of summer disrupted considerably the intake of phosphorus by plants. A low phosphorus content and a poor ratio between nitrogen and phosphorus cannot be overcome prior to the end of the growing season.

According to data obtained from plant diagnostics, for normal grain formation during the heading period the leaves must contain not less than 0.80-0.96 percent P_2O_5 . In the majority of instances, the phosphorus content ranged from 0.35 to 0.60 percent. Since there was an adequate supply of nitrogen, the ratio moved sharply towards this element: for a norm of N : P_2O_5 as 5 : 1, the ratio on many farms and in many rayons was 6-12 : 1. In this connection, the grain in many instances also contained very little phosphorus. Hence -- low quality gluten. It was adequate in terms of quantity, but it was Group II.

It has been established that if the grain contains less than 0.7 percent phosphorus, then for any amount of gluten it is classified as Group II and quite often as Group III. Allow me to cite some examples drawn from the operational practice of the Gigant Sovkhoz and the Kolkhoz imeni 1 Maya in Blagodarnenskiy Rayon. On the first farm, the nitrogen in the leaves (according to plant diagnostics) was 4.25 and phosphorus -- 0.8 percent and their ratio was 5.3 : 1. For a yield of 36.7 quintals per hectare, the gluten of the flour (31 percent) was classified as being in Group I. On the second farm the nitrogen was 5.30-5.39 and the phosphorus was 0.7-0.6 percent and their ratios were 7.6 : 1 and 9 : 1. The gluten of the flour -- 28.8 and 29.5 percent: Group III.

This year's experience has shown quite clearly that in a dry climate nitrogen top dressings are not very effective for raising yields. Moreover, they can cause harm when there is a breakdown in phosphorus nourishment. Consequently, special caution must be the rule when employing nitrogen on intensive fields. The principal application of nitrogen on fallow fields can generally be ruled out; it is needed in the autumn only when sowing following non-fallow predecessor crop arrangements.

In order to correct the nutritional conditions in the spring, it is best to apply root top dressings of N and P, leaving a portion of the phosphorus for this purpose. Foliar top dressings for the sake of grain quality should be carried out only in accordance with the data of leaf diagnostics. An overfeeding of nitrogen is dangerous. During this season, especially in damp rayons, once the gluten is "accelerated" by top dressings to a level in excess of 30 percent, it loses strength and meets the requirements only for Groups II and III. From 2.3 to 3.3 percent mineral nitrogen accumulates in the grain.

Hence, balanced nutrition in terms of both nitrogen and phosphorus is an indispensable condition for obtaining strong grain. Plant diagnostics must be carried out according to the gross content of nutritional elements. Tissue diagnosis for nitrogen can be employed as an auxiliary method.

The quality of grain is affected to a substantial degree by pests and diseases. The stink bug continues to cause a great amount of damage. Our measures against this pest include two-stage treatment of sowings, border spraying of fields using ground equipment, mandatory cutting of field perimeters and so forth.

Permit me to mention still another very important aspect of the work being carried out on intensive fields. Here I have in mind the use of aviation in rayons characterized by a dry climate. With an air temperature of approximately

40 degrees and incredibly dry land, work carried out with 25 liters of liquid is not very effective. It is a useless expenditure of resources. The regulation with regard to the work of aviators must be changed on an urgent basis. Low volume spraying is not suitable for the eastern regions; a conversion must be carried out over to the use of large volumes of liquid, order must be restored in the use of aircraft and they must not be operated later than 0900 hours in the morning.

In conclusion, allow me to add a few words concerning the economics of the situation. This year, in regions throughout the kray, extensive production tests were carried out on three technologies -- the traditional one, one recommended by SNIISKh by zones and a complete program (English type). The per hectare expenditures for these technologies amounted respectively to 100-142, 116-231 and 280-293 rubles.

On the whole, the intensive technology provides reimbursement for the expenditures in the form of an increase of not less than 8 quintals of grain per hectare. The complete program technology is unprofitable, especially in arid regions.

Here are the actual expenditures in 1986 for an intensive hectare of winter crop sowing by zones of the kray (in rubles):

I	108.9
II	189.1
III	217.7
IV.	213.4
V.	256.0

The average for the kray was 174 rubles.

The sales price for a ton of grain, taking strong grain into account, was 102 rubles. The average net income was 144.3 rubles per hectare, with fluctuations ranging from 97 to 204 rubles. The average production cost per ton of grain was 55.7 rubles, with fluctuations ranging from 36 to 63 rubles. The profitability was 83 percent (from 47 to 144 percent).

Hence, use of the intensive technology, when utilized correctly for obtaining strong grain, is justified from both a biological (yield) and economic standpoint. And it must be employed on a more extensive scale.

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BRIEFS

WHEAT SOWINGS EXPANDED--Stavropol Kray--The grain growers in Stavropol Kray, having implemented their first commandment ahead of schedule and while continuing their sale of strong and valuable wheat to the state, are commencing their preparations for winter crop sowing operations and simultaneously carrying out thorough cleaning of their spring crop seed. Grain cleaning machines are working around-the-clock at 700 mechanized thrashing floors, strain renovation and the exchanging of seed for various crops are being carried out, chemical preparations are being made available and agrochemical training for the machine operators is commencing. This year the sowings of wheat using the intensive and improved technologies will be expanded considerably and occupy 1.2 million hectares. And this means that high quality seed will produce an even greater return. /by S. Timofeyev/ /Excerpt/ /Moscow SELSKAYA ZHIZN in Russian 12 Aug 86 p 1/ 7026

GRAIN OBLIGATIONS FULFILLED--Stavropol Kray--The farmers in Kirovskiy, Sovetskiy, Georgiyevskiy and Ipatovskiy rayons and other farmers performed their tasks successfully. Stavropol Kray was the first in the country to report fulfillment of its obligations for grain procurements. Here each intensive hectare of wheat produced an increase of 10.2 quintals and overall the kolkhozes and sovkhoses gathered in approximately 900,000 additional tons of grain. More than 90 percent of the wheat was shipped to granaries of the homeland as being of strong or valuable quality. The Krayagroprom, RAPO /rayon agro-industrial association/ specialists and the party committees are presently attempting to summarize the accumulated experience. The operational style of the best leaders and specialists is being studied and the causes of mistakes and blunders are being uncovered. The conclusion is a simple one -- the success must be consolidated and surpassed. /by S. Timofeyev/ /Excerpt/ /Moscow SELSKAYA ZHIZN in Russian 12 Nov 86 p 1/ 7026

STAVROPOL KRAY FIELD WORK--Field work is nearing completion in Stavropol Kray. In summarizing the results achieved this year, the farmers are generalizing accumulated experience and making preparations for surpassing the results already achieved. /Text/ /Moscow SELSKAYA ZHIZN in Russian 12 Nov 86 p 1/ 7026

MOTOR VEHICLES, HIGHWAYS

OFFICIAL URGES MORE PUBLIC FILLING STATIONS IN RURAL AREAS

Moscow SOVETSKAYA ROSSIYA in Russian 15 Aug 86 p 1

[Article by V. Pomogayev, deputy administration chief in the RSFSR State Petroleum Inspectorate: "Will There Be a Filling Station in the Village"]

[Text] Almost a third of the motor transport which is in private use is now operating in the rural area. The personal automobile has today become one of the important indicators in the standard of living of rural workers and a mark of their prestige. The demand for them is growing much more rapidly than the service area, which has been called upon to simplify the concerns of motorists, is expanding.

The question of refueling is an especially sharp one. At the present time there are no filling stations to service the owners of private transportation systems in more than 800 rural rayon centers in the Russian Federation. In order to fill his vehicle, a kolkhoz member must travel dozens of kilometers and then stand several hours in line near a gas pump. It turns out that a complete day is spent, generally speaking, on a harmless operation. Time is lost and good spirits deteriorate. Such ordeals also have a negative effect on production matters.

The RSFSR Union of Consumers' Societies, on which the supplying of the rural citizens with fuel and lubricants has been placed, is still not filled with alarm at the situation that has taken shape. During the last three years, the builders have commissioned only 33 filling stations. Is this a lot or a few? It is possible to judge from the fact that it was proposed to hand over 129 of these stations during last year alone. Not a single filling station was built in Kirov, Murmansk, Omsk, Perm, Smolensk, and Chita oblasts. If automotive services advance on the village in the future at such a snail's pace, then it will be possible to satisfy the needs of motorists somewhere after a quarter of a century. It is quite evident that not a single vehicle owner will agree with such a prospect. Of course, it is easiest of all to put one's sluggishness and open indifference down to difficulties. Yes, difficulties exist. However, consumer's societies have other ways to solve the problem of selling fuel in the village. It is possible, for example, to sign contracts with the kolkhoz members for selling market asset gasoline to the rural population for cash through the kolkhoz filling stations, as is

done in Voronezh Oblast. There, 68 farms have already shifted to this form of trade. It is necessary to be bolder in incorporating the experiences from the joint servicing of agricultural equipment and personal transportation, construct more areas for mobile filling stations, and make wider use of containers and small stations.

A paradoxical situation has taken shape. A surplus of fuel has accumulated at the oil tank farms, but the cooperators are not fulfilling the plan for selling gasoline to the owners of private transportation. Talking about the republic as a whole, only 29 percent of the annual limit of market asset gasoline was taken from the RSFSR State Committee for the Supply of Petroleum Products oil tank farm in 1985 by consumer's societies. This indicator was even worse for individual regions. In Krasnodar Kray, for example, all told, 21 percent of the plan was sold to the population; in Orenburg Oblast -- 12.5 percent; and in Smolensk Oblast -- 7 percent. In Tomsk Oblast, not a single kilogram of fuel was sold to automobile owners from the planned 1,800 tons.

One asks: On what fuel, therefore, did the rural motorist travel? The answer is simple: On that which had been allocated for state motor transport which was shifted to private individuals illegally. Such a lack of control leads to the fact that a considerable portion of market asset petroleum products is not being used as intended. Thus, last year, the Vologda Consumer's Society expended approximately 70 percent of the gasoline, which was intended for sale to the village people, on its own needs. There occur, however, incidences of a much more serious nature. In Bizhbulyakskiy Rayon in the Bashkir ASSR, market asset coupons for almost 54,000 liters of gasoline were issued to the drivers of state transport. Not a single filling station refuelled using the issued coupons. They also accumulated with the motorist. An evident plundering of fuel from the state is taking place. Such cases are not isolated ones. They exist in Kalinin, Omsk and Smolensk oblasts; and in a whole series of other regions. Cases have been established where enterprises in the consumer cooperative system are transferring petroleum products to organizations in other ministries and departments at a time when the village is sitting at an empty plate.

During this year alone, the RSFSR State Petroleum Inspectorate has imposed economic sanctions totaling almost three million rubles on consumer society enterprises. However, can they really make up for the material and moral damages that have been inflicted on village workers by the officially created shortage? How much time has been lost during this heated period of harvest hard work, which has overflowed into direct losses for the state? I think that it is time for the management of the RSFSR Union of Consumers' societies to think seriously on resolving this important problem.

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MOTOR VEHICLES, HIGHWAYS

GOSPLAN OFFICIAL ON NATURAL GAS-POWERED VEHICLE DEVELOPMENT

Moscow AVTOMOBILNYY TRANSPORT in Russian No 9, Sep 86 pp 1-3

[Article by A. Lokhov, deputy chief of the USSR Gosplan's Transport Department: "More Attention For Bottled-Gas Vehicles"]

[Text] The decisions of the 27th CPSU Congress provide for a significant increase in the production and use of bottled-gas vehicles, which operate on compressed natural gas, in the national economy. This permits two problems to be solved at once -- savings of oil fuel and the protection of the environment from contamination by the toxic components of exhaust gases.

The automotive industry has been serially producing bottled-gas GAZ and ZIL vehicles and gas equipment sets for converting gasoline vehicles into bottled-gas ones. The automotive builders are now designing bottled-gas KamAZ, MAZ and KrAZ vehicles. This year, motor transport enterprises will receive KamAZ - 53208 and KamAZ-52218 vehicles whose engines will operate on liquid gas fuel (compressed natural gas and diesel fuel).

Not only automotive builders and motor transport workers but also workers in other branches of the national economy are participating in the preparations for the wider use of bottled-gas vehicles. Work is being performed in the enterprises of the USSR Ministry of Ferrous Metallurgy to lighten gas bottles. The production of cylinders made of alloyed steel, which are 1.5-fold lighter than standard ones, has now been mastered. The USSR Ministry of the Gas Industry has developed a system for siting automotive gas-refilling compressor stations (AGNKS). The capacity of each of the stations is 500 re-fillings a day. It is also possible to decrease empty runs by bottled-gas vehicles by using small (garage) container stations and mobile gas refueling trucks.

A test batch of mobile gas refueling trucks (PAGZ) has been manufactured on the chassis of the MAZ-93971 semi-trailer. One of these refueling trucks can refuel 25...30 vehicles. The RSFSR Ministry of Motor Transport and the Ukrainian SSR Ministry of Motor Transport have manufactured gas refueling trucks of their own design. Their reservoirs of compressed gas consist of blocks of standard automotive gas cylinders that are equipped with equipment and a device for dispensing the gas. These gas refueling trucks can refuel 18...20 vehicles.

The experiences of the Main Leningrad Motor Transport Administration in converting Ikarus buses to operate on liquid gas deserve attention. Low pressure (8-10 kilograms per square meter) gas is used in their design. Special dispensers, which have been connected to the city's gas supply network, have been set up at the ends of the route to refuel the buses. One of these buses operates for 40-50 kilometers on one refueling.

At the present time, a special subdivision has been organized in the USSR Gosplan's Transport Department to coordinate the work on using bottled-gas vehicles; and a special laboratory -- in the State Scientific Research Institute for Automotive Transport. Groups to develop the design, technological and norm documentation, which will regulate the operation of bottled-gas vehicles, have also been created in the RSFSR Ministry of Motor Transport.

Observation of the dependability of the operations of gas equipment has been organized. For example, a network of base motor transport enterprises, which should become a school for progressive experience in improving the technical operation of bottled-gas vehicles, has been created in the RSFSR Ministry of Motor Transport for these purposes. The Lenin Cargo Motor Transport Enterprise, the Gorkiy Production Association for Cargo Motor Transport No 1 and others are among these enterprises.

With the wide-spread use of bottled-gas vehicles, it is very important to teach the peculiarities in their operation to drivers, repair personnel and engineer technical workers. As a rule, classes are now being conducted during courses in training combines in specially equipped classrooms in accordance with a 40-hour program. A certificate is issued to the specialists upon completion of the classes and the passing of the examinations. Incidentally, a driver is allowed into an automotive gas-refilling compressor station to refuel his vehicle only if he has this certificate.

The correct distribution of bottled-gas vehicles to motor transport enterprises has important significance. These vehicles are now being sent to a city where automotive gas-refilling compressor stations are already operating or will be commissioned this year. Unfortunately, individual organizations are not carrying out this decision, and vehicles are being sent to rayons and cities where there are no automotive gas-refilling compressor stations. These cases are especially common in departmental motor transport where the conversion of vehicles to operate on compressed natural gas is practically not being conducted.

Similar violations can also be detected in general-use motor transport. Thus, 32 motor transport enterprises, many of whom are located 50 kilometers or more from the nearest automotive gas-refilling compressor station, are operating bottled-gas automobiles in the Mosoblavtotrans [Moscow Oblast Motor Transport] Territorial Association. As a result, 68 percent of the bottled-gas vehicles are operating on gasoline in Moscow Oblast.

In the State Scientific Research Institute for Automotive Transport, a set of norm and technical documents, which regulate the procedure for converting

motor transport assets to the use of compressed natural gas, were developed during 1982-1985. This documentation embraces questions covering technical maintenance, the storage of bottled-gas vehicles, safety measures, the conversion of vehicles to bottled gas, the periodic examination of the compressed natural-gas cylinders, and tests of the fuel systems of automobiles operating on this type of fuel. The basic document is the "Manual on Operating Bottled-Gas Vehicles Using Compressed Natural Gas".

The organized manufacturing of special garage equipment is of no less importance when preparing the motor transport enterprise production base to service bottled-gas vehicles. The central design, construction and engineering bureau of the Rosavtospetsoborudovaniye [RSFSR Automotive Special Equipment] Republic Association has designed a set of such equipment and instruments.

The model K-278 stand is designed to check the fuel system's gas instruments that are removed from a vehicle. It is a pneumatic unit with a vacuum pump. Using it, one can check and adjust the high and low pressure regulators, the filling and distribution valves and the solenoid-operated valves. The model K-278 stand consists of two cylinders with compressed air, a control panel, a compressor (AKR-2), a receiver, a set of mounting parts and accessories, and a vacuum pump (ZNVR-1D).

The model K-277 assembly is used to check the fuel system equipment directly on the vehicle. The high and low pressure gas regulators, the solenoid-operated gas valve, and the dispensing and mainline valves are checked using it. The assembly consists of a control panel, receivers for compressed air, and a set of mounting parts and accessories.

Rosavtospetsoborudovaniye enterprises are also serially producing the model I-139M special instrument set for servicing bottled-gas vehicles. A total of 21 different instruments are contained in this set. This permits all of the required adjustment and installation operations involved in servicing the gas equipment to be performed.

The national economy is being filled up and will be filled up with bottled-gas vehicles by their manufacturing in USSR Ministry of the Automotive Industry plants and the conversion of carburetor vehicles which are in operation. The second way will predominate. The leading role in this work also belongs to general-use motor transport enterprises.

The most rational way to increase the pool of bottled-gas vehicles is to organize centralized works for their conversion. For this purpose, the RSFSR Ministry of Motor Transport has prepared and equipped 20 special sections in motor vehicle repair plants, which are already capable today of converting 16,000-20,000 gasoline vehicles a year. A service area, which includes one-five, oblasts has been assigned to each special section.

The RSFSR Ministry of Motor Transport has fully prepared the norm and technical base for carrying out this work. A "Manual For Organizing the Conversion of Automotive Rolling Stock To Operate On Compressed Natural Gas",

stations for testing the fuel systems of the converted vehicles, and an instruction manual for carrying out the conversion work have been developed.

Specifications entitled "Motor Vehicles. The Conversion of Gasoline Models Into Bottled Gas Ones Operating on Compressed Natural Gas. Production After Conversion and Testing of the Fuel Systems" and "Regulations on Organizing the Work To Test the Fuel Systems of Vehicles Operating on Compressed Natural Gas" have been coordinated between and approved by the Ministry of the Automotive Industry, the Ministry of Internal Affairs and the USSR State Committee for Supervision of Safe Working Practices in Industry and for Mine Supervision.

All of this documentation of union-wide application regulates the conversion of motor vehicles, the testing of their fuel systems and registration with the State Motor Vehicle Inspectorate. Questions concerning the receipt of motor vehicles for conversion, their issuance after conversion and the formulation of the required documents on the converted motor vehicles for transmission to their owners are also reflected in it.

Motor vehicles must be received in good working order for the conversion. Motor vehicles can be converted also during their overhaul. Before conversion, motor vehicles must without fail undergo TO-2 [Motor Vehicle Maintenance-2] completely with all attendant repairs completed.

It is also possible to carry out the conversion at special sections in production technical combines and motor vehicle maintenance stations and at large motor transport enterprises. The preparation of the motor vehicles, especially the conversion, and the testing of the gas fuel system are included in the overall technological process.

The above listed work is performed at specially organized stations for the receipt and washing of motor vehicles, the draining of fuel and coolants, dismantling and preparatory work, conversion of the bed, mounting work on the gas equipment assembly, filling the motor vehicles with fuel and coolants, the preparation and checking of the gas system items, the assembling of the cylinders, and the testing of the gas system. It is also necessary to have storage premises, a section for re-examining the gas cylinders and a compressor station.

The model AKS-8M mobile compressor assembly is being used at the present time as a source of compressed air. It creates a pressure of 200 kilograms of force per squarecentimeter and its output is 120 cubic meters per hour. It is more advisable to use the model VShV-2.3/230 compressor with a compressed-air accumulator. It has a greater output (140 cubic meters per hour), a more economical electric motor, and increased reliability and serviceability. The use of the compressor improves the working conditions of the operator.

The experiences of the Lenavtoremont [Leningrad Motor Vehicle Repair], Sverdlovskavtoremont [Sverdlovsk Motor Vehicle Repair] and other production

associations has permitted new and more advanced technological elements for converting motor vehicles to be discovered. In particular, the method of assembling cylinders in a cassette before mounting them on a motor vehicle in a special mechanized jig is handy. The mounting of the gas equipment pack, which is manufactured on mechanized production lines, is organized at a high technical level. Receivers, which are made in the form of a block consisting of 9-12 motor vehicle gas cylinders, are being used to increase the output of compressors and to insure larger spare operating conditions in their operation. It is advisable to use a tool with a fixed torque during assembly operations.

Since high pressure (up to 200 kilograms per square centimeter) cylinders are used on bottled-gas motor vehicles, they must undergo a periodic examination in accordance with the Rules for the Mounting and Safe Operation of Vessels Operating Under Pressure, which have been accepted in the USSR. The USSR State Committee for Supervision of Safe Working Practices in Industry and for Mine Supervision has set the examination period for cylinders made of alloyed steel at once every five years and for those made of carbon steel at once every three years. It is necessary to perform this work at special points whose capabilities should correspond to the pool of bottled-gas motor vehicles operating in the region that this point services.

Hydraulic (under a pressure of 300 kilograms per square centimeter) and pneumatic tests of the screwed-in valve devices and a pressure test of the bottled-gas motor vehicles' fuel system using compressed air under a pressure of 200 kilograms per square centimeter are performed at the point for periodically examining the cylinders. This point can also be used for the centralized motor vehicle maintenance and repair of the gas equipment on motor vehicles of enterprises that are located in immediate proximity to it.

The labor content in examining cylinder packs by testing the air-tightness of the valve devices is 2.65 manhours, and the testing of the bottled-gas motor vehicles' fuel systems is five manhours. At a point with a capacity for servicing 1,500 motor vehicles, the size of the production and storage premises is 1,500 square meters, and at points with a capacity of 3,000 motor vehicles, it is 2,400 square meters. The estimated costs of these points is equal to 526,000 and 640,000 rubles, respectively.

A point for the periodic examination of gas cylinders includes a section for examining the cylinders, storage premises, a metal worker and mechanic section, a station for the pressure testing of the bottled-gas motor vehicles' fuel systems, a compressor bay, and other engineer support sections. The model 2GM-1.3/13-250 gas compressor is the source of high-pressure compressed air. Since the initial working pressure of this compressor is 12 kilograms per square centimeter, a model VP2-10/9M auxiliary compressor is also attached to it. Compressors with an initial working suction pressure of one kilogram per square centimeter (for example, the model VShV-2.3/230), i.e., possessing the capability to intake air from the atmosphere, can also be used for these purposes.

A set of equipment (it consists of 20-30 items) has been designed for these points in the RSFSR Ministry of Motor Transport. This equipment has a good technical level and insures high productivity. For example, the equipment set includes a station for the pressure reduction of the high-pressure compressed air (the model N-714), an assembly for the hydraulic testing of the cylinders (the model N-706), a pneumatic mechanical arm (the model N-717), an assembly with fittings for the pneumatic testing of the cylinders (the model N-712), and a high-pressure compressed air dispensing console (the model N-715).

The technological process of periodically examining the gas cylinders includes the work to disassemble the adaptors and valves, degas and inspect the inner and outer surfaces, determine the weight and capacity, hydraulically test with water, dry, assemble the adaptors and valves, inspect them for air-tightness with compressed air having a pressure of 200 kilograms per square centimeter, paint, and check for completeness the cylinders according to the model of motor vehicle.

The periodic examination of the cylinders takes place in a pooled manner. The enterprises, which operate the motor vehicles, disassemble the cylinders and deliver them to the point. The cylinders are delivered in special packaging as a set based on the types of motor vehicles.

It is necessary to inspect the fuel system after the cylinders are mounted on the motor vehicles. This is done by checking the air-tightness of the junctions in the gas system using a pressure of 10 and 25 kilograms per square centimeter and its step-by-step testing for air-tightness and strength using a pressure of 50, 100 and 200 kilograms per square centimeter.

The conversion of motor vehicles to the use of compressed natural gas requires day-to-day purposeful work by the collectives of motor transport enterprises - both those for general use and departmental ones. It is necessary to put the distribution of bottle-gas motor vehicles into good order and to send them only to cities where automotive gas-refilling compressor stations are operating or will be commissioned in the very near future and to increase the demands on the work of the automotive gas-refilling compressor stations. They must operate smoothly and insure the refilling of bottled-gas motor vehicles with gas in accordance with the state standard in effect.

Special attention must be devoted to carrying out the whole series of preparatory work in those cities where it is necessary to begin operating bottled-gas automobiles in 1987-1988. Here, the motor transport enterprise production technical base must be prepared in advance, personnel trained, and sections for servicing and storing the motor vehicles organized.

It is necessary to complete the work that has been started to build and strengthen the production base in motor vehicle repair plants, service stations, production and technical combines, and large motor transport enterprises; accelerate the construction and commissioning of points for the periodic examination of the cylinders and the testing of the fuel systems of automobiles that operate on compressed natural gas; and organize the manufacturing of technical equipment for these points.

It is necessary to equip training combines and automotive schools with the appropriate equipment and visual aids in a short time.

A large amount of work remains to be done in reconstructing the existing production premises of motor transport enterprises. This work must be conducted according to plan, at rapid tempos and in accordance with the requirements of existing norms. During the reconstruction of the enterprises special attention must be devoted to organizing the areas for producing gas, and the stations for removing gas from the cylinders and to the equipping of motor transport enterprises with diagnostic and repair equipment.

The efficiency in using bottled-gas motor vehicles can be significantly increased by siting them in the immediate proximity of automotive gas-filling compressor stations and by introducing garage refilling stations, mobile gas-refueling trucks and additional cylinder assemblies on trailers.

The experience, which has been accumulated in the branch in operating bottled-gas motor vehicles, confirms the need and possibility for the broader conversion of the automotive pool to compressed natural gas. This timely measure will permit gasoline to be saved and the air contamination level in cities to be reduced.

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MOTOR VEHICLES, HIGHWAYS

FACTORS KEEPING TRUCK TRAIN USE AT INADEQUATE LEVEL

Moscow IZVESTIYA in Russian 26 Sep 86 p 2

[Article by I. Abakumov, O. Pavlov, O. Stefashin, and G. Shipitko, IZVESTIYA special correspondents in Tselinograd and Omsk oblasts: "A Truck Train On Virgin Land Routes"]

[Text] We knew that the idea of using truck trains to transport grain had been born and implemented here, in Tselinograd Oblast, 15 years ago. Then, Rostov-na-Don and Saratov, Volgorad and other oblasts embraced it. The names of those who began to drive "100-tonners" or truck trains close to this weight (Teplyakov, Kireyev, Kolos, Mirchev, Denk, and Baygetzhinov) were known throughout the country. Time passed, however, and it was as if yesterday's heroes of the grain route passed into the shadows. But is it so? We thought about this in Tselinograd and we soon returned to the problem under an unexpected confluence of circumstances -- but only in Omsk.

Nevertheless, we are beginning with Tselinograd.

The GAI [State Motor Vehicle Inspectorate] man on point-duty told us: "If one follows the letter, it is impossible to release them to the line."

The road worker: "It is necessary to send repair brigades right after them -- they break up the routes and sides of the road."

The sovkhos director: "They are much more productive than trailer-less vehicles and cost us threefold less."

Three opinions about the same grain truck trains. We encountered them nearly everywhere on the virgin lands. As they had reported in the motor vehicle administration, 520 vehicles with trailers having a carrying capacity from 30 to 100 tons are engaged in transporting grain in Tselinograd Oblast. The Omskavtotrans [Omsk Motor Transport] Production Association has sent 130-tonners for the harvest in its oblast. It appears that an ancient "undertaking" has not had its day. From where, then, does such a contradictory attitude towards overweight vehicles come?

We decided to look at the problem as if from the inside -- from the driver's cab. Two of us thrust ourselves as fellow-travellers on F. Sibirov, a driver

in the Tselinograd Motor Vehicle Enterprise. Faid Khamidovich has driven his 40-tonner (a vehicle with three trailers) for 16 years. He is now delivering grain from the Tselinograd Agricultural Technical School to the elevator at the station of Sorokovaya. The distance is 40 kilometers. How long will we be on the way? The driver says: "About 40 minutes." In actuality, it was around 40.

It is possible to make two trips in a vehicle without a trailer.

Sibirov suggests: "Do not count trips but the weight of the cargo being transported. "

Later, they said to us in the motor vehicle administration: "On the average, each machine transports approximately 700 tons of cargo annually. Sibirov has delivered more than 2,000 tons of grain in two weeks. There's a sloth for you! And the wages are good."

Faid Khamidovich argues: "Of course, money is not the worst thing. With overweight vehicles, it is the toiling. The requirement for spare parts is a large one, but the assets are allotted just as for a standard vehicle. Nevertheless the main thing is not this -- the driver himself makes up our truck train. The enterprise does not allot trailers; there are simply none of them. We manufacture them from what is suitable. I was lucky; 13 years ago, written-off equipment turned up and I re-equipped it."

I. Yanson, the chief of the oblast motor vehicle administration, agreed: The absence of trailers is delaying the spread of truck trains. Those, which industry is producing are not suitable now. More spacious and reliable trailers are needed. Recently, they mastered their production in Alma-Ata. However, they are far from perfection.

The experience of the same Tselinograd farms convinces one that the use of overweight vehicles is a profitable matter. V. Streltsov, the director of the Krasnyy Flag Sovkhoz, for example, is convinced that the farm would not cope in a timely fashion with grain shipments without them. They are providing a significant economic effect for the motor vehicle enterprise. Work costs in Tselinograd Oblast have been reduced up to 40 percent. During the present harvest alone, truck trains permitted approximately 1000 vehicles to be freed. Fuel is being saved. With all of these virtues, truck trains have remained seemingly illegitimate for many years.

I. Yansom said: "The USSR Ministry of the Automotive Industry is not taking notice of trains nor is it allocating additional spare parts for them. How will you help the driver? "

... When we entered the office of I. Bogatyrev, the chief of Omskavtotrans and a Hero of Socialist Labor, a meeting was ending there, which V. Konovalov, USSR deputy minister of the automotive industry, had conducted. What a meeting it was, incidentally. Vlaimir Ivanovich and several specialists from the ministry had travelled during harvest around Kazakhstan and visited Tselinograd.

"Dear Ivan Genrikhovich Yanson is voluntarily or not substituting concepts. We certainly have different pictures of truck trains. For example, we in the ministry consider a KamAZ [Kama Motor Vehicle Works vehicle] with a trailer to be a truck train -- after all, it is 20 tons; and with two trailers -- 30. Industry is producing trailers for the KamAZ. A trailer with a side-dumping mechanism exists for the KamAZ 55102 for agricultural use."

I. Bogatyrev joined the discussion: "We ourselves have designed a dump trailer for the KamAZ 5511. The Omsk Automotive Repair Works No 3 is now producing it. A total of 530 of these trailer "dump trucks" are now working during the harvesting. Yesterday, I was at the Pobeda Sovkhoz in Novovarshevskiy Rayon, and the director praised them very much. A total of 1,200 trailers from our automotive enterprise are participating in the harvest. Under the condition that each makes three swings a day (this is completely realistic), this represents more than 25,000 tons of grain transported. Thus, we, the motorists, are completely in favor of the truck train."

The deputy minister continued: "In Tselinograd, truck trains are formed not only using the KamAZ but also the KrAZ [Kremenchug Motor Vehicle Works vehicle], Kutaisi trucks and ZIL [Moscow Motor Vehicle Works imeni Likhachev] vehicles. As far I know, industry is making trailers for the ZIL and for the Kutaisi vehicles. Regarding the KrAZ, I agree that there are no special trailers. This vehicle is designed for construction purposes."

He continued: "I think that the basic vehicle for the threshing-floor-elevator is the KamAZ. It travels rapidly with two trailers. Problems do not arise with unloading it at elevators. Three trips a day are guaranteed at distances of 40-50 kilometers. It could tow three-four trailers if necessary."

Here, we recalled what Yevgeniy Dmitriyevich Bayteryakov, deputy chairman of the Kokchetav Oblispolkom and director of the operational staff for the harvest, had said about the achievement and about the six "100-tonners" working on the grain routes. We told V. Konovalov about this.

"I am not against '100-tonners'. Form them and operate them as the need and conditions exist. However, I am not changing my opinion -- the KamAZ with a load of trailers, which is not beyond its abilities, is the truck train that will become firmly established in the near future. Look: 60 percent and more of the harvest shipments now fall to the KamAZ in the virgin land oblasts of Kazakhstan. The production of new machines for the village using ZIL and Gorkiy vehicles will soon begin. In the meantime, however, the KamAZ has no rival on the route from the threshing-floor to the elevator. It is necessary to produce a little more trailers for it."

Undoubtedly, truck trains are a phenomenon that is rather regional. But what if one talks about a region such as the Transurals, Siberia and Kazakhstan? Can the ministries and departments really not consider the requirements of this grain field. You see, the USSR Ministry of Grain Products was able to react to the appearance of truck trains rather rapidly. Elevators were reequipped. Unloading takes place in minutes. Other departments are posing as observers.

The deputy minister of the automotive industry has his own and -- it is necessary to suppose -- well considered point of view about truck trains. However, it is not necessary to close one's eyes to the fact that few of them are being formed and will be formed using the KamAZ alone. Nevertheless, responsibility for the pool of trailers should not be placed only on the Ministry of the Automotive Industry. The State Agroindustrial Committee should also be concerned. You see, the entire network of rather powerful enterprises from the former Selkhoztekhnika is under its management. In each large grain oblast, it is completely possible for one of them to specialize in the production of 10-25-ton trailers for any truck.

There is a department from which all motorists suffer quite a bit, but especially truck train drivers. If a vehicle stops, it is a nuisance; but a truck train -- it is a nuisance with a trailer. The virgin land oblasts of Kazakhstan and Omsk Oblast are now achieving a high level of readiness for the vehicles to transport grain. Idle time, however, is occurring because of trivial glands, 213th washers (they cost 55 kopecks) and cups.

I. Bogatyrev said: "We have been preparing for the grain shipment since winter and we have accumulated spare parts and assemblies, but it's as if the harvest does not exist for the Ministry of the Petroleum Refining and Petrochemical Industry. There, they have in no way taken into account the fact that the expenditure of rubber items increases during this time."

The Ministry of Tractor and Agricultural Machine Building also has a peculiar attitude toward overweight vehicles. They look upon them as nothing more than a temporary passion. It is the overweight carriers that have cast light on a problem that has been in the shadows for a long time -- the grain carriers, which are now being produced, do not stand up to criticism.

V. Streltsov said: "The corn-growers need transportation similar to the D-565. We have one of them and we drive it from one brigade to another."

As we see, there are many problems with overweight carriers. We touched upon one of them at the very beginning of our story. Truck trains have not been listed in the appropriate road movement rules.

V. Chuiko, chief of the Tselinograd Oblast GAI, said: "We understand the importance of the harvest and the value of the grain from a human point of view. Monthly, we are closing our eyes to the disorder."

Time has shown that truck trains are needed, but we are not hurrying to recognize and legitimize them. Is it not time to do this -- and not only in GAI? It is necessary for managers, transport workers and planners to think seriously about this.

We have heard the opinion of competent people. The opinions are not identical. It turns out that the problem remains and, certainly, will be discussed some more. I would like that the truck train drivers, who are working, and those who have retired, participate in this. You see, the truth will arise.

MOTOR VEHICLES, HIGHWAYS

VARIOUS OBSTACLES HINDER MOTOR VEHICLE HARVEST SUPPORT

Moscow PRAVDA in Russian 5 Sep 86 p 2

[Article by I. Totskiy: "They Called It 'Harvesting'"]

[Text] The motor vehicle is rushing hurriedly on country roads. It is hurrying to the field, to the threshing-floor to the elevator. If one looks closely, it is not difficult to note the word "harvesting" on its side. A corn-grower will meet this truck and look respectfully at the driver. You see, the driver is one of those whose name is often forgotten in the village during the harvest. Whether or not the grain will arrive in the corn-bin or under a reliable covering depends on his dexterity and skill.

It also happens, however, that a motor vehicle driver becomes ashamed in front of the farmers. N. Yevladdenko, the chief of the Bobrinetskiy Rayon's Agro-promptrans [Agroindustrial Transport] Enterprise in Kirovograd Oblast; A. Shchichenko, secretary of the party organization; A. Motornyy, chairman of the brigade leaders' council; V. Bakal, brigade Komsomol group organizer; and V. Chernyshenko, director of a Komsomol youth brigade, have written to PRAVDA: "Here, we are now experiencing the following. People are ashamed to look us in the eye. Our vehicles are excellent and we do not shun innovations. We have tied together the transport of the enterprises that are located in the rayon agroindustrial association. We are delivering animal feed and fuel to the farms, we are carrying away poultry and milk, and we are servicing the rayon union of consumers' societies and other organizations in the agro-industrial association. We are fulfilling the plan -- but at what cost?"

In the enterprise where there are more than 300 motor vehicles, one fifth are idle annually because of the absence of tires. It may be that the drivers are not saving the rubber and not re-treading the casings? You cannot say this. Last year, for example, they saved tires valued at more than 9,000 rubles.

Why then did the directors of the enterprise, knowing that a portion of the motor vehicles were laid up during the hard work at harvest time, not turn for aid to the oblast agroindustrial committee and to the Ukrainian SSR State Agroindustrial Committee? It turns out that they did. They received an answer: They said it had been stipulated this way by Gosplan -- one tire for

each truck a year. The run norm is 63,000 kilometers, but the planning norm for a motor vehicle is 70,000 kilometers. Here is what happened: dozens of trucks in this enterprise and hundreds in the rayon agroindustrial association stand idle. They do not run on hubs....

Repair personnel are adding to the bitterness of the drivers. A times, they send a motor vehicle through the gates of the workshop in such a shape that the engine has to be overhauled again or several assemblies and units replaced, especially pistons, liners and inserts. Why is the Ministry of Automotive Industry manufacturing so few spare parts for operating needs? The State Agroindustrial Committee is again washing its hands and again referring to Gosplan. Meanwhile, even the KamAZ are standing idle. In Kirovograd, a special automotive center has been created, which has been called upon to supply consumers with spare parts; however, as the authors of the letter maintained, it is necessary to wait months for some items.

The idle time of motor vehicles and their inefficient use, which costs a pretty penny, have seriously disturbed A. Semenov, the chief of the motor vehicle transport subsection of the Khabarovsk Agroindustrial Committee. He reports: "Many branches and departments in the kray are annually sending motor vehicles to their neighbors for harvesting crops. Although their transfer to Krasnoyarsk Kray is not cheap, we understand that this is being done in the name of grain. There is only one thing impossible to understand -- who granted the right to the customers to use the vehicles haphazardly and treat the drivers on the mission indifferently, often leaving them to the mercy of fate?"

The same number of trucks is sent annually from Khabarovsk Kray to Krasnoyarsk Kray, as a rule, for the harvest. You see, however, the structure of the automotive pool has changed: There are more dump trucks, the carrying capacity of the vehicles has increased, their dynamic qualities have improved, and truck trains are being more widely used. It would seem that it is possible to reduce the number of vehicles sent.

Moreover, the periods of dispatching the motor vehicles are being established arbitrarily. According to the observations of that same A. Semenov, the most strenuous period of the harvest in Krasnoyarsk Kray is from 10 September to 10 October. The Khabarovsk drivers arrive there much earlier, when the local motorists are only preparing for the transportation of the grain. As a result, it is necessary to deliver non-agricultural freight. Try then to convince a driver that his temporary duty with his neighbors is extremely important if he himself sees that quite a few gaps are formed in his native enterprise because of the shortage of transportation.

However, this does not alarm only the motorist. When the time for dispatching vehicles to the harvest arrives, trying times begin for the riggers who have been assembled at the railroad stations. At times, their heads swell from questions such as how to load, what to load, and what to attach the vehicles to the flatcars with.

The patience of the Moscow riggers has ended, and they have sent a request to D. Martynov, secretary of the party organization in Rigger Assembly Office No 1: Write in the newspaper that the director of the Moscow Main Automotive Transport Administration and the Ministry of Railways must turn toward the stations where echelons, which are departing to the eastern rayons for the harvest, are being formed.

What are the charges of the riggers? Normal working conditions do not exist at the Krasnaya Presnya, Rizhskaya, Butyrskaya, and Ramenskaya stations. Vehicles are being tied down during the night without illumination. This is a gross violation of safety techniques. In accordance with the Ministry of the Railways requirements, birch is unsuitable for eaves lathes but this is just what is being delivered to the riggers.

Even more difficulties arise when the vehicles are delivered back. Thus, last year, the cargo areas at the stations of Zonalnaya and Ovchinnikovo in Altay Kray were unsuitable for this work. Here, they had not taken care of elementary living conditions: The people lived in an unheated car without water and light and there was nowhere to dry clothing and prepare food.

The workers in the office, the author of the letter writes, consider it inadvisable to send Moscow riggers to Altay Kray. They propose making wider use of the experience of the Leningrad drivers who themselves mount their vehicles on the flatcars. This costs five rubles when, the enterprises pay the Rigger Assembly Office 17 rubles for each motor vehicle.

As we see, the work of the transport workers during harvest suffers from considerable shortcomings. If they are repeated from year to year, this means that the directors of the above-mentioned ministries and departments are not always taking the alarms signals and requests of the motorists into consideration.

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MOTOR VEHICLES, HIGHWAYS

IMPROVING MOTOR VEHICLE HARVEST SUPPORT IN URALS AREA

Sverdlovsk URALSKIYE NIVY in Russian No 9, Sep 86 pp 2-4

[Article: "Motor Vehicle Transport in the Harvest--Efficient Utilization"]

[Excerpt] The harvest is in full swing in the vast grain fields of the Ural Kray. Thousands of motor vehicles and other equipment have been fitted to transport grain from the field. Multi-ton truck trains are hurrying to the elevators. Grain routes have been laid along numerous major highways.

The fate of the harvested grain depends in many ways these days on the efficient use of transport. Success is achieved where they have managed to set up its well-organized operation throughout the complex (field - threshing floor - elevator). But this is impossible without adopting the leading methods of labor organization, personal initiative and creative attitudes toward business. As in everything today, the organization of transport support for the harvest must be approached from a position of acceleration, fundamental reorganization and departure from trite old solutions. It is toward this that the resolution of the CPSU Central Committee and the USSR Council of Ministers, "On the Further Improvement of the Management Mechanism in the Country's Agro-Industrial Complex", inclines labor collectives.

Improving organization in the operation of motor vehicles is directly connected with reducing expenditures on the transport of the harvest, lowering the costs of production and strengthening the economy of the farms. And there are few resources here. Harvest transport expenditures for the Russian Federation in 1985 were a colossal figure--7.5 billion rubles. There are still many farms and rayons where the organization of the transport process is not given the proper amount of attention, expenses are not taken into consideration and the rule is: at any price. Because of numerous organizational upsets, the output for one vehicle remains extremely low. Where last year in the RSFSR each vehicle transported an average of 15 tons of agricultural products daily, in the Perm Oblast and the Udmurt ASSR it was not more than 10 tons. It is necessary to put an end to the practice of using equipment in that way.

Application of the experience of the Saratov workers deserves all manner of approval. In this oblast back in 1973 a system was instituted for the centralized control of transports according to hourly schedules. The accurately controlled process and collectives' use of drivers from a brigade contract

caused a sharp increase in the output of vehicles. On account of the rhythmical delivery of grain, the carrying capacity of elevators rose and traffic jams at their gates disappeared. Diversion of equipment from industry was reduced by one third. And the grain-collection period was reduced on the whole by ten days. These results were achieved in the oblast owing solely to the fact that the transport conveyor was put in order.

The Penza Oblast has set out along the same path. In recent years here they have emphasized the reconstruction of grain-receiving enterprises to accommodate large-load vehicles. In the places where centralized detachments are located, they have set up a good repair-technical depot. The schedules for shipping grain out of the farms are calculated by computer. One result of the ongoing work is that the number of motor vehicles drawn from industry is being permanently reduced. In 1976 4,500 vehicles were sent to rural areas to help, 1,200 in 1985, and today only 800.

We also have favorable examples of centralized transport control in the Urals. Purposeful work has long been going on in the Orenburg Oblast. As a result, the daily productivity of one vehicle in the harvest rose 48 percent in 1985 in comparison with the previous year. For comparison let us say that growth was 12 percent in the Russian Federation. The Orenburg workers not only adopted the experience of those in Saratov, but contributed their own as well. In particular, they set up mobile vehicle cities. One of these, belonging to truck convoy 1173 of the Orenburgavtotrans Association (the collective works transporting grain from the fields of the Iletskiy Rayon), is located in the village of Krasnokholm. It is equipped with everything necessary for the quick and capable repair of rolling stock. There are vans containing lounges for the drivers and facilities. A press center effectively illuminates the course of fulfillment of socialist obligations by individual drivers and by the detachment as a whole. Other motor vehicle transport enterprises are equipping similar cities for the harvest period. This allows the servicing and repair of vehicles to be concentrated in one place, which increases the quality of prevention and improves control over the observance of safety regulations. In mobile cities the problems of situating people are being resolved successfully. It is possible to have cultural-mass arrangements for them, such as movies and appearances by propaganda teams.

In the majority of the rayons of Bashkiria, control over shipments of agricultural products is being organized according to the Saratov example. For that reason the labor productivity of drivers grows certainly here from year to year.

However, time-tested experience must be used everywhere. This is the way the question was posed at the All-Russian Conference on the Use of Vehicles and Control of Shipments of Agricultural Products, which took place in the summer of this year in Orenburg. As was emphasized at the conference, the RSFSR Council of Ministers has entrusted the work of setting up transport control centers to oblast and republic vehicle transport associations and agro-industry committees.

Every year drivers from other regions of the country come to the aid of the Ural grain growers. The direct expenses for bringing just one vehicle to us from the central rayons amount to 800 rubles. Time required for transport is

eight to ten days. Thousands of flat-cars are required. This is only one side of the problem. One cannot omit taking the other into consideration. Diversion of vehicles is reflected in the work of industry; indeed, we are not talking about dozens, but about hundreds and thousands of vehicles. For example, the Leningrad Oblast sends more than 5,000 annually to other rayons for the harvest. the Moscow and Sverdlovsk Oblasts are in analogous situations. And it frequently turns out that this equipment is either used at half strength or sits entirely idle. In these cases, of course, the specific individuals who allow bad management must be held responsible.

But it must be understood that all these things are half measures. The time has come to get to the root of the problem. Not simply to confine ourselves to the urgent requests of the directors of kolkhozes, sovkhoses and rayons, apportioning additional vehicle transport to them, but to demand a precise settling. Adoption of a scientifically founded method of vehicle distribution would be a good place to start.

In the future, inter-oblast transferral of vehicles will be used as an extreme measure, so every autonomous republic, oblast, rayon and farm must be able to cope on its own.

Certain kolkhozes and sovkhoses in the Chelyabinsk and Orenburg Oblasts display such initiative today. This is facilitated by changing activities over to the principle of self-repayment. One must pay for the use of equipment. Excessive transport expenditures lead to increased cost of production and worsened economic activity in collectives. In a word, valuable initiative deserves the widest dissemination. The results of useful initiative show in picking up materials of this number.

Transport support for the harvest may conditionally be divided into two stages. These are servicing harvest equipment in the fields and transporting grain to the elevators.

Experience shows that the labor productivity of drivers taking away grain increases 30-40 percent as a result of their consolidation by detachment, team and work organization with the combiners into a single duty detail. However, stagnation has begun to show recently in the implementation of the collective contract in this sector. To overcome this means to secure further increase in the efficiency of vehicle transport utilization.

A significant effect is achieved through purely technological solutions. Thus, reversible trailers and collecting bins have been adopted successfully for shipping out grain in the Chelyabinsk, Kurgan and Tyumen Oblasts. According to the calculations of specialists, the productivity of vehicles is increased up to 35 percent in this way. The use of tractors with reversible trailers to service combines, the construction of intermediate threshing floors and the use of large-load vehicles of the KamAZ [Kama Motor Vehicle Works] type in truck trains can significantly reduce the transport problem. The directors of farms and the specialists of RAPO's [rayon agro-industrial associations] and agro-industrial committees must put these resources into operation more persistently.

The grain's trip to the elevators begins at the threshing floors. In the kolkhozes and sovkhozes of the Ural zone much has been done in recent years to reorganize them and install more productive equipment. And today the capability of the drying facilities completely guarantees the receipt and timely processing of the grain that comes in from the fields and the systematic dispatching of it to the elevators. However, this is only when work goes on round the clock. Such a regime should be instituted at all threshing floors without exception.

The organization of grain shipments along major highways should be improved. The average distance to elevators is about 40 kilometers. However, there are farms and even whole rayons where the shipment distance reaches 100 kilometers and more. It is necessary on such routes to provide for rest stops for the drivers and to spare them from the lines at filling stations. That is, all the conditions for highly productive labor should be set up. It is in that way that they approach this in Orenburg. Special grain routes are set up here. Vehicles not involved in the harvest are detoured onto other roads. Parking places are arranged.

And the last link in the transport chain is the elevator. Centralized control over shipments has eliminated lines at the gates of many of them. However, there is still a problem here. In the Perm Oblast, out of 22 grain-receiving enterprises only nine are equipped with mechanized unloading for large-load vehicles--in Bashkiria they are found at half of existing elevators. The situation is no better in other oblasts. The problem of re-equipping these enterprises is extremely urgent.

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MOTOR VEHICLES, HIGHWAYS

DESIGNER EXPLAINS IMPROVEMENTS IN UAZ VEHICLES

Moscow ZA RULEM in Russian No 9, Sep 86 pp 10-11

[Article by A. Vinokurov, deputy chief designer of the UAZ: "The UAZ: Degrees of Modernization"]

[Text] During the 11th Five-Year Plan, the Ulyanovsk Motor Vehicle Works imeni V. I. Lenin carried out a planned modernization of the vehicles produced by it. This modernization affected a large part of the assemblies and systems. It had as its goal the increasing of engine and undercarriage reliability and longevity, the improving of the vehicles' active and passive safety features, the lowering of fuel expenditures and toxicity levels, and the creation of greater comfort for the driver and passengers. As a result, the designs of many assemblies and the technical characteristics of the vehicles in general were considerably changed. Many innovations were especially incorporated in station wagons of the UAZ-469 family.

Modernization components were incorporated step-by-step as production was ready for them. In 1985, all models received new index numbers. The UAZ-469 basic station wagon (its distinctive feature is the presence of wheel reduction gears) is now designated the UAZ-3151; its most wide-spread modification -- the UAZ-469B (without wheel reduction gears) is now the UAZ-31512; and the UAZ-469BG ambulance for rural areas has been given its own index number -- UAZ-3152.

During the initial modernization period, the front and rear lights were updated, side turn indicators and separate lights for illuminating the number plate and backing up were incorporated, and obsolete lever-type shock absorbers were replaced by telescopic ones. The rear springs in the UAZ-469B and UAZ-469G vehicles have become "softer." A sectional column, which better insures against injuries, has made its appearance in the steering mechanism; and a "safety" rear-view mirror with an anti-blinding device -- in the vehicle's interior (cf. ZA RULEM, Nos 5-6, 1981).

During the next stage, considerable changes were made to the engine and its systems: Its horsepower grew from 72 to 77 and -- since January 1986 -- to 80 horsepower at 59 kilowatts. The intake system, head and pistons were changed. Cylinder liners without inserts, valve sockets made of cermet material, a thermostat with a hard filler, a new model K-131 carburetor, etc.,

were used. An expansion tank and a hermetic radiator plug were introduced into the cooling system. This permitted liquids with low freezing points (anti-freeze, including Tosol) to be used. As a result of mounting a modernized engine with a carburetor having an electronic control system and a 4-bladed fan, fuel expenditures were noticeably reduced, the noise of the automobile somewhat lessened, and its maximum speed increased to 110 kilometers per hour.

The cardan shafts were also modernized during this period: Now, they are additionally centered on the smooth neck at the splined joint and have an improved spider bearing radial face seal. This has increased their life considerably. Other chassis assemblies also underwent changes aimed at increasing reliability and longevity.

At the same time, quite a few innovations have appeared in the interior. The windshield washer with a foot drive has been replaced by an electrical one. It is combined with the windshield wiper and this is quite a bit more convenient. Front and rear safety rails, which are included in the frame of the canvas top, as well as seat belts for the front seats and the rear three seats have been incorporated. A more effective heater is being used.

The change in the configuration and location of the heater was reflected in the design of the engine preheater. It now receives fuel directly from the main tanks through the float chamber of the carburetor using an electric booster pump; an independent large capacity fan has been installed (previously, there was a separate tank for the gasoline and the heater fan supercharged the air). As a result, the preheater has begun to operate more smoothly and reliably.

The electrical system is now equipped with an alarm, and bunches of wires with plug connections have been incorporated.

A very important modernization element is the separate braking system that was incorporated in 1985. Naturally, not only the development of new assemblies for the brake system itself but also the altering of interior, frame and other system elements were required for this.

The new braking system has a dual-chamber main cylinder with two transparent tanks, a two-loop hydraulic drive (a separate one for the front and rear axles) and a signalling device which warns the driver of a malfunction or that one of the loops is not working. With respect to each other, each loop performs the function of a spare braking system. The main cylinder with the signalling device attached to it is located under the engine hood in an area protected from dirt and accessible for visual checking. This entailed the use of suspended clutch and brake pedals and a hydraulic drive for disengaging the clutch. It also required moving the battery to the right side of the front panel.

The main cylinder for disengaging the clutch is located next to the brake cylinder. The heater and engine preheater had already been improved previously.

The main brake cylinder (its diameter is 28 millimeters) has a primary and secondary chamber. The liquid from the first one, which is larger in volume, goes to the front brakes; that from the secondary, which is smaller in volume, -- to the rear brakes. The full brake pedal travel is 200 millimeters, the piston in the primary chamber travels 19 millimeters, and the one in the secondary chamber -- 15 millimeters. The diameter of both the front and rear cylinders is 32 millimeters.

The signalling device has two pistons: a long one with a ring-shaped channel under the switch's ball and a short one. It is fastened with a screw to the main brake cylinder and connected by short tubes to its chambers. Thus, each of the signalling devices' cavities, which are located on both ends of the cylinder, is connected with one of the loops in the drive for the brakes. The device is triggered when there is a drop in pressure in the loops. A light on the instrument panel signals this.

The hydraulic drive for disengaging the clutch consists of a main and operating cylinder that are connected by a pipeline. The tanks of the main cylinders for disengaging the clutch and the brakes are identical. The main data on the clutch hydraulic drive are as follows: complete movement of the pedal -- 200 millimeters, diameter of the main cylinder -- 22 millimeters, of the operating one -- 24 millimeters.

The AvtoUAZ Association has developed the cylinders for the brake and clutch hydraulic drive and also the signalling device. The clutch and brake pedals are now suspended from an arm which is fastened to the front panel and the instrument panel of the interior. The panel is reinforced in the area of the arm and the floor has been deepened (die-stamped) in order to insure the necessary pedal travel. The braking system with a separate drive has somewhat increased braking effectiveness and the hydraulic clutch drive has decreased the effort needed on the pedal.

It is necessary to point out that the modernized body is not interchangeable with the previous one. When it is necessary to replace it, the motor vehicle must also be equipped with brakes having separate drive and with a hydraulic clutch.

The modernization of the UAZ will continue. The use of a vacuum amplifier and wheel mechanisms of a more rigid design will serve to further improve the brake system. A new gear-box with all forward gears synchronized (they are now only synchronized in third and fourth gear) is being prepared for production. Bodies will soon receive a prime coating using the dipping method. This will make them quite a bit more durable, especially the fin assembly items. A whole series of measures to further increase the economy, safety and comfort of the motor vehicle is planned.

At the present time, the numbers "01" are being stamped on the factory plates of UAZ motor vehicles next to the model designation (for example, UAZ 3151-01). They designate the first stage of modernization. This is a temporary condition which will pass with the completion of all of the work to improve the Ulyanovsk "cross-country vehicles."

Technical characteristics of the UAZ-3151-01 motor vehicle (the differing technical characteristics of the UAZ-31512-01 modification are given in parentheses).

General data. Wheel arrangement -- 4 x 4. Number of seats -- 7. Equipped weight -- 1,700 (1,590) kilograms. Complete weight -- 2,500 (2,150) kilograms. Maximum speed: with a full load -- 105 kilometers per hour, with a driver and passenger -- 110 kilometers per hour. Time from a stop to a speed of 80 kilometers with a full load -- 30 seconds, with a driver and passenger -- 24 seconds. Planned fuel expenditure: at 60 kilometers per hour -- 12.1 (11.3) liters per 100 kilometers, at 80 kilometers per hour -- 15.2 (13.8) liters per 100 kilometers. Fuel reserve -- 2 x 39 liters. Braking distance at a speed of 70 kilometers per hour when using the operating brake system -- 42 (38) meters, when using the back-up system: front circuit -- 70 meters, rear circuit -- 92 meters.

Dimensions. Length -- 4,025 millimeters. Width -- 1,785 millimeters. Height -- 2,050 (2015) millimeters. Base -- 2380 millimeters. Road clearance -- 300 (220) millimeters.

Engine. Model -- UMZ-4.141.10 (UMZ - 414.10). Number of cylinders -- 4. Working volume -- 2,445 cubic centimeters. Compression ratio -- 6.7. Horsepower -- 80. Horsepower at 59 kilovolts with 4,000 revolutions per minute. Maximum torque -- 17.2 kilograms of force . meters (159 N . meters) at 2,200-2,500 revolutions per minute. Fuel -- A-76 gasoline.

Transmission. Clutch -- dry, single disk. Gear box -- 4 gears. Transfer case -- 2-stage. Main transmission -- dual(single). Wheel reduction gears -- cylindrical (none).

Suspension of the front and rear wheels -- independent, using longitudinal semi-elliptical springs.

Brakes. Working system -- dual circuit with a hydraulic dual circuit drive. Drum mechanisms in all wheels. Parking brake -- transmission, mechanically operated drum.

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8802

CSO: 1829/28

MOTOR VEHICLES, HIGHWAYS

IMPROVEMENTS IN TULA MOTOR SCOOTERS OUTLINED

Moscow ZA RULEM in Russian No 9, Sep 86 p 11

[Article by V. Pudoveyev, chief designer, and Yu. Pozdnyakov, chief of the design bureau, city of Tula: "A New Generation of Motor Scooters"]

[Text] The Muravey cargo motor scooter, which the Tula Machine Building Plant imeni V. M. Ryabikov is producing, enjoy a steady demand. By raising the operating characteristics and improving the vehicles, the plant is trying to carry out the suggestions and desires of consumers as much as possible. Thus, the Muravey cargo-passenger modification has appeared (ZA RULEM No 12, 1981). Modernized TMZ-5.402 (cargo-passenger and TMZ-5.403K/F (with a mounted platform or van, respectively) arrived during the third quarter of 1983 to replace the TGA-200-01 family.

These motor scooters are no different from their predecessors externally; however, their design has undergone major changes. These primarily concerned the engine. The cast-iron cylinder was replaced by an aluminum one with a cast-iron sleeve that has a three-channel scavenge. The shape of the combustion chamber and the design of the muffler and air filter have been changed. This has permitted the horsepower to be increased to 12.5 horsepower at 9.2 kilovolts without increasing the operating expenditure of fuel. The abrasion resistance of the cylinder-piston group has grown quite a bit through the incorporation of an air filter equipped with a replaceable paper element.

Increasing the horsepower also provided at the same time an opportunity to increase the carrying capacity of the vehicles to 280 kilograms. Accordingly, chassis elements were strengthened (in particular, the brake drive for the rear wheels), and dampers were mounted in the clutch in order to cushion impacts during sharp torque drops. The seat attachment was changed.

The mentioned design innovations improved the technical and operating indicators of the Muravey. When designing the Muravey-2 family whose production is being mastered at the present time, special attention was paid to an artistic and design study of the external shape.

Plastic items are being widely used: light casing, housing for the controls, the instrument box cover, and other items. The weight of the facing has not

only been lowered by this. The distinctive pattern and shape of the surfaces of the items and their contrasting combination with a primary color has permitted interesting color pattern solutions to be found for the external appearance of the motor scooters.

The shape and dimensions of the seat and controls (it is of the motorcycle type and adjustable in height and tilt) has been changed. The vehicle has become more comfortable for drivers of different heights and builds.

Among other innovations are the switch boxes, the stop-signal circuit breaker from the front brake, the "European light"-type headlight, cat's eyes, a coil-type grip for controlling the throttle, indicator lamps for the turn indicators and high beam, and an anti-theft device.

The carrying capacity of the Muravey-2 motor scooters has reached 315 kilograms thanks to the strengthening of the load-bearing elements and to the use of new model K-96 radial tires. We managed to decrease the yoke's tendency toward self-sustained oscillations ("shimmy") by changing the kinematics of the front wheel suspension.

Muravey-2 cargo motor scooters are being produced in three modifications: with a mounted platform (the basic one) -- TMZ-5.403-01K; with a van body -- TMZ-5.403-01F; and a cargo-passenger model -- TMZ-5.402-01. The basic modification has been awarded the state seal of quality. This year, they plan to produce 80,000 Muravey-2 motor scooters of which 60,000 will have a platform body, 17,000 a cargo-passenger body and 3,000 a van body. The first two modifications are entering retail trade. The price is 1,020 and 1,050 rubles, respectively.

In the future, a new engine with a combined valve and piston system for controlling the intake of the fuel-air mixture, which has already found use in the TMZ-5.951 motorcycle, will be installed in all motor scooters, including the Tulitsa. This will permit the operating fuel consumption to be decreased by 10 percent and the tractive characteristics of the engine to be increased at idle and average revolutions.

Another few words about the Tulitsa passenger motor scooter. Its power plant and facing have also been modernized with a view to maintaining the maximum standardization. In the near future, we are planning to equip the Tulitsa with a cowl that has a more modern shape. The main characteristics of the vehicle have not been changed but the dry weight has been reduced by three kilograms. The index number of the modernized Tulitsa is TMZ-5.301-01, its price is 475 rubles, and the annual production volume is 7,000.

Technical characteristics of the Muravey-2 TMZ-5.403-01K motor scooter with a mounted platform (the different characteristics of the Tulitsa TMZ-5.301-01 motor scooter are in parenthesis).

General data. Dry weight -- 250 (137) kilograms. Carrying capacity -- 315 (170) kilograms. Maximum speed with a full load -- 62 (97) kilometers per hour.

Fuel consumption with a full load at a speed of 45 (70) kilometers per hour -- 6 (4.2) liters per 100 kilometers. Braking distance at a speed of 60 kilometers per hour -- no more than 30 (7) meters. Dimensions. Length -- 2720 (2080) millimeters. Width -- 1250(950) millimeters. Height -- 1180 millimeters. Base -- 1840 (1400) millimeters. Rear wheel base -- 1050 millimeters (none). Road clearance -- 115 (125) millimeters. Engine. Type -- 2-cycle, single cylinder with a three-channel scavenge. Cooling -- air, forced by a fan. Cylinder diameter -- 62 millimeters. Piston stroke -- 66 millimeters. Operating volume -- 199 cubic centimeters. Compression ratio -- 7.6. Horsepower -- 13 horsepower at 9.6 kilovolts with 5200 revolutions per minute. Carburetor -- the K62G. Air filter -- with a replaceable EFV-3-2 paper element. Starting-- electric starter and mechanical. Electrical equipment. Voltage -- 12 volts. Ignition system -- battery. Batteries --6MTS-9 (two connected in parallel) or ZMTR-10 (two connected sequentially). Voltage regulator -- the RR121. Ignition coil -- the B51. Spark plug -- the A17V. Light -- the FG140-200D. Horn --the S205B.

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8802

CSO: 1829/28

MOTOR VEHICLES, HIGHWAYS

BRIEFS

CHEBOKSARY AREA HIGHWAY CONSTRUCTION -- Cheboksary, 4 [Sep] -- The Yantikovskiy Rayon has become the 10th Chuvash rural rayon in succession where all farms are connected by roads and motor vehicle highways. This work, which has great economic and social significance, will be completely finished in the next two years. A large bridge has connected the banks of the Sura River -- a tributary of the Volga that has an abundance of water. It is necessary to build a motor transport ring that will connect a majority of the cities and rural rayons in the autonomous republic. The ring will be closed during the 12th Five-Year Plan. [By PRAVDA parttime correspondent Yu. Knyazev] [Text] [Moscow PRAVDA in Russian 5 Sep 86 p 2] 8802

NEW BRIDGE IN KRASNOYARSK -- Krasnoyarsk -- A second municipal bridge across the Yenisey has been opened in Krasnoyarsk. It includes eight man-made engineering structures. The total length of the bridge is more than five kilometers, including the 875 meters across the river-bed. Its width is 41 meters. This insures the movement of motor transport and trolley buses in three lanes. The Krasnoyarsk city council ispolkom decided to name the new bridge "Oktyabrskiy". The Yenisey river transport workers provided a great deal of help to the transport builders during the erection of the bridge. [By a VODNYI TRANSPORT special correspondent] [Text] [Moscow VODNYI TRANSPORT in Russian 9 Sep 86 p 3] 8802

LARGER CAPACITY FUEL TANKERS -- A new truck train will be the largest fuel tanker. It consists of a KamAZ-5410 saddle prime mover and a tanker semi-trailer with a capacity of 16,300 liters. Serial production of the new item is being organized at the Neftekamsk Dump Truck Works. In the future, a tank containing 25,000 liters will be developed based on the KamAZ [Kama Motor Vehicle Works] truck train and a 40,000 liter one -- based on the MAZ [Minsk Motor Vehicle Works] truck train. What will provide such an increase in capacity? Ye. Obrezumov, deputy manager of the special motor transport section in the Scientific Research Institute for Motor Vehicles and Automobile Engines, explains: "The economic efficiency of transport will be increased. Until now, gasoline was transported in tanks with a small capacity -- from 2,000 to 5,000 liters -- using GAZ [Gorkiy Motor Vehicle Works] and ZIL [Motor Vehicle Works imeni Likhachev] vehicle chassis. Many vehicles and drivers are needed." Their dimensions are not the only distinctive feature of the enormous "barrels" on wheels. They will have a new design -- this will considerably reduce the

specific quantity of metal per item and -- this means -- it will permit the amount of product being transported to be increased. Truck trains with giant tanks have already begun to supplant the small size ones during the present five-year plan. The new models are very economical: One trip by a tanker with 16,300 liters will replace three to eight trips by standard ones. [By N. Larina] [Text] [Moscow IZVESTIYA in Russian 25 Sep 86 p2] 8802

CHERNIGOV BRIDGE, HIGHWAY CONSTRUCTION --(RATAU) -- Motor movement over the new bridge across the Desna has been begun in Chernigov. Having used an assembly method involving extended blocks and prefabricated designs that had been assembled together in advance on the shore and using other advanced technologies, the bridge builders erected the project three months prior to the planned time. At the same time, the first phase of the new by-pass road section was commissioned with a length of 17.5 kilometers. This will permit vehicles, which are moving along the Leningrad-Kiev-Odessa highway, to avoid the oblast center. The collectives of the Kiyevdorstroy-2 [Kiev Road Construction-2] and Ukrdor-mostostroy [Ukrainian Road and Bridge Construction] trusts are building the complex. [Text] [Kiev PRAVDA UKRAINY in Russian 27 Sep 86 p 2] 8802

FRUNZE ASSEMBLY PLANT SCORED --A session of the State Committee for Standards, in which the Ministry of the Automotive Industry participated, has examined the question of poor quality in the manufacturing of GAZ-SAZ-3507 and SAZ-3502 dump trucks at the Frunze Motor Vehicle Assembly Works. During an inspection, the State Committee for Standards found gross violations of the specifications for manufacturing dump trucks at the enterprise. This is reducing the technical and economic indicators of the vehicles considerably. The production situation does not assure a steady number and the required technical level of the products being produced. The technological processes in the manufacturing of vehicle items and assemblies are being grossly violated at the works, and a number of very important operations are simply absent. Based on the results of the inspections, 945 GAZ-SAZ-3507 dump trucks valued at more than three million rubles and 124 SAZ-3502 valued at almost half a million rubles were eliminated from the accounts concerning the fulfillment of the sales plan by the Frunze Motor Vehicle Assembly Works. The profit was removed to the state budget. It was suggested that the Ministry of the Automotive Industry take urgent steps to improve the technical level and quality in manufacturing dump trucks and to introduce a special procedure for receiving products at the plant, in which ministry specialists would participate. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 39, Sep 86 p 19] 8802

10 MILLIONTH ZHIGULI PRODUCED -- The tellers of the main production line of the Volga Motor Vehicle Works put down the number 10 million on 9 October. This many vehicles have been assembled here since the enterprise started. Economical, rapid and comfortable low-powered cars with a silver castle on the radiator form half of the country's entire passenger car pool and are encountered more and more frequently on the planet's roads. Under the conditions of the economic experiment, the Volga Motor Vehicle Works has received an opportunity to update and modernize its production in a more compressed period of time. Participants in the meeting, which was devoted to the assembly of the anniversary 10 millionth automobile, accepted an appeal for the workers of the entire factory -- to celebrate the 12th Five-Year Plan with the ahead-of-schedule production of excellent quality products. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 42, Oct 86 p 3] 8802

USTINOV-GLAZOV HIGHWAY OPENS -- Glazov, Udmurt ASSR-- the longest bus route with a length of almost 200 kilometers runs along the new Ustinov-Glazov asphalt highway that was commissioned ahead of time. The main highway runs through several rayons in the autonomous republic, insuring a significant savings in fuel and time when transporting passengers and various cargoes. The construction of roads here has traditionally been a weak spot. This year, however, they began to overcome the lagging behind -- the work volume grew by a third. They managed to do this thanks to the inclusion of a number of enterprises in industry and the State Agroindustrial Committee in the construction project. Such associations as Izhmash [Izhevsk Machine Building] and Izhstal [Ishevsk Steel] participated with a great deal of effort in this task that is important for everyone. The transfer to a year-round work schedule also contributed to the acceleration. [Text] [Moscow SELSKAYA ZHIZN in Russian 4 Oct 86 p 1] 8802

MILLIONTH URAL TRUCK PRODUCED -- The first trucks came off the production line of the Ural Motor Vehicle Works in July 1944. These were the famous three-ton ZIS-5V. Since then, the enterprise has been expanded and reconstructed. Now, it is the leading one in the UralAZ production association, where the millionth Ural vehicle was assembled on 22 February 1986. During the 12th Five-Year Plan, the works will begin to accelerate the production of diesel models, a prominent place among which has been allotted to dump truck trains consisting of the Ural-5557 prime mover and the GKB-8350 semi-trailer with a total carrying capacity of 14 tons. [Text] [Moscow ZA RULEM in Russian No 9 Sep 86 p 9] [Copyright: Za Rulem 1986] 8802

CSO: 1829/21

RAIL SYSTEMS

BRIEFS

KUYBYSHEV METRO CONSTRUCTION PROGRESS--In construction of the Kuybyshev metro, the first meters of rail have been laid on the sector between "Pobeda" and "Bezmyanka" Stations. At the former, concrete work on the vault over the platform is being completed, and at the latter, finishing work is coming to an end. Finishing work at the "Kirovskaya" Station, which will join the tunnel with the electric locomotive depot which is under construction, is basically complete. Installation of platform structures at "Yungorodok" Station, the only one above ground, is under way. The Kuybyshev metro builders are developing a competition for putting the start-up sector of the subway system into operation ahead of schedule by the 70th anniversary of the Great October Revolution. [By G. Kimov] [Text] [Moscow STROITELNAYA GAZETA in Russian 17 Aug 86 p 2] 9194

SECOND KHARKOV METRO--Kharkov, 11 (Oct) (RATAU [Radio and Telegraph Agency of the Ukraine] Correspondent)--Construction of the second line of the Kharkov metro completed. Today a test train ran over the last sector of this line on the underground mainline, which connects the city's largest residential micro-region, Saltovskiy, with the downtown area. Soon 3 stations will be receiving passengers--"Akademik Pavlov," "Studencheskaya" and "Geroi truda." With the start-up of the new sector, which is planned for the October holidays, the total length of the subway in the oblast center will be 27 kilometers. [Text] [Kharkov RABOCHAYA GAZETA in Russian 12 Oct 86 p 1] 9194

DNEPROPETROVSK METRO CONSTRUCTION UPDATE--Dnepropetrovsk--Builders of the Dnepropetrovsk subway system have completed drilling the first tunnel on the line. The break-through was made at the 1,200-meter mark between the future stations of "Metallurgi" and "Prospekt Svobody" 2 months ahead of the deadline set in the contracts. It was made by tunneling crews from tunnel unit No. 32 of "Kharkovmetrostroy," headed by V. Ignatov and A. Lyakhov who were working toward each other. At a precisely fixed time, the 1.5 meters of rock separating them was taken down by an explosion. Thanks to the skill of the mine surveyors, who had determined the direction of the teams without error, there were only a few millimeters deviation from the common axis of the tunnel. The underground course of the Dnepropetrovsk metro is being laid out under complex mining and geological conditions. Collectives from local enterprises are helping the metro builders to overcome the tunneling difficulties. Metallurgical, mining equipment and electric locomotive building plants have built tubing, underground housings and special car dumpers for them. With the start-up of the first section of the subway system, which is planned for 1990, transit time between the major industrial region and the center of town will be reduced by a factor of 3. [By V. Chernoyvan, GUDOK correspondent] [Text] [Moscow GUDOK in Russian 12 Sep 86 p 1] 9194

LENINGRAD METRO VIDEO MONITORING--Leningrad (TASS)--An automated system of escalator control based on industrial television has started to operate on one of the most lively lines of the Leningrad metro, the Moskovsko-Petrogradskaya. The "pictures" of the monitors show the situation at the stations, their above-ground vestibules and even the readings of individual gauges. The equipment in the "underground telecenter" permitted them to make monitoring the technical status of the mechanical transporters reliable; when they break down, colleagues in the dispatcher center promptly send the emergency crew. Wide-ranging automation of the fundamental industrial processes is being carried out in the Leningrad subway system im. V. I. Lenin on the basis of the comprehensive "Intensification-90" program which was developed here. In particular, it calls for increasing (passenger) conveyance without additional service personnel. Making broad utilization of the Belorussian railroad workers for increasing the efficiency of the steel mainlines, the Leningraders are purposefully incorporating into the transportation process automated systems for train control, power supply distribution and equipment repair. [Text] [Moscow GUDOK in Russian 18 Sep 86 p 1] 9194

AUTOMATED TRAFFIC CONTROL SYSTEMS--Izvestkovaya (Khabarovskiy Kray), (TASS)--The speed and weight of trains running from the Trans-Siberian railway onto the Baykal-Amur Mainline have increased significantly. The incorporation of an automated traffic control system and renovation of the track bed over a 100-kilometer run on the line between Izvestkovaya and Tyрма to the west of Khabarovskiy Kray. BAM engineers brought the first trains through here which exceed weight norm, by 2,000 tons. [Text] [Moscow SELSKAYA ZHIZN in Russian 11 Sep 86 p 1] Trains weighing 8,000 tons yesterday set out from Baykal to the Pacific Ocean on the East Siberian, Transbaykal and Far Eastern Railroads. Along the entire route, from Slyudyanka Station, which is in Irkutsk Oblast, to Vladivostok, the train movement is being controlled by an automated system of operational traffic control. Inter-locomotive information exchange, which was instituted at the same time on the 3 mainlines, has permitted car idle time during loading and unloading to be reduced. "These are just the first steps," A. Dovgiallo, deputy chief of the Transbaykal Railroad told a TASS correspondent. "In the near future, 3 more railroads, the Baykal-Amur Mainline, the Krasnoyarsk and the Kemerovo, will convert to an automated system of operational traffic control. Getting the needed data beforehand and processing it, each partner will get additional reserves for acceleration. Arkhara, Amurskaya Oblast. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 4 Oct 86 p 1] 9194

ENCLOSED BILEVEL RACK CARRIER TESTED--Tolyatti-- It is known that for shipping compact automobiles, two-level flatcars and all-metal freight cars are widely used. Recently the first group of improved rolling stock appeared at Tolyatti Station on the Kuybyshev division. These were covered cars, automobile conveyor cars, manufactured at the Kalinin Railroad Car Building Plant. Their capacity is the same as that of the two-level flatcars--17 vehicles. But they have a roof, end walls and a (wire)-mesh body. In the opinion of specialists, such a design for rolling stock will sharply increase the safety of vehicles in transit. The covered automobile conveyor cars are undergoing testing. [By B. Musalitin] [Text] [Moscow GUDOK in Russian 16 Sep 86 p 1] 9194

POTI-BURGAS RAIL FERRY--Poti (Georgian SSR), 8 (Oct), TASS--Today in the port of Poti, a rail ferry made a first test mooring. Soon regular runs of ships with trains on board will begin between Georgia's gateway to the sea and the Bulgarian port of Burgas. They will permit shipment of national economic goods between these Black Sea harbors to be speeded up significantly. Now a comprehensive renovation of port facilities is underway in Poti. Bulgarian specialists are assisting their Soviet colleagues. [Text] [Moscow GUDOK in Russian 9 Oct 86 p 2] 9194

NEW TENGIZ RAIL LINE--Kulsary (TASS)--Operational traffic was opened a month ahead of schedule on a siding branch linking the Tengiz oil fields with the country's single railroad network. The first train arrived today at the new Tengiz station carrying equipment and other cargo. [Text] [Moscow GUDOK in Russian 7 Oct 86 p 2] 9194

ZNAMENKA-DOLINSKAYA LINE ELECTRIFIED--Znamenka--80 kilometers of electrified line on the sector between Znamenka and Dolinskaya were put into service. The primary building and installation work was done by collectives SMP-517 of the "Odesstransstroy" trust and its subcontracting organizations Emp-707, SMP-870 and SMP-810 of "Transelektromontazh" trust. They were also concerned with the operators. A 16-apartment building was constructed for them at Sharovka station. Finally the long-awaited day arrived. Power controller A. Fedorova from the Znamenka division sent the power into the contact network. Soon an electric locomotive was dispatched from Znamenka station to test the contact network. The next day engineer V. Zhmur took the first freight train, with a weight of more than 5,000 tons, to Solinskaya station. Thus regular traffic began on this electrified sector which is so important to the Odessa Railroad. "We are planning to convert more than 500 kilometers to electric traction on the mainline during the current five-year plan," V. Rashchupkin, chief of the electrification and power supply service for the railroad, informed us. Next in line is the conversion of the Pomoshnaya - Kotovsk - Vapnyarka route to electric traction. This work will be done by a collective from "Odesstransstroy" trust. [By M. Gorbis] [Text] [Moscow GUDOK in Russian 11 Oct 86 p 1] 9194

ZHDANOV, YASINOVATAYA DIVISIONS MERGED--With the aim of improving the management of the transportation process, the Ministry of Railways has merged the Zhdanov and Yasinovataya divisions of the Donetsk Railroad into a single Yasinovataya division. Its boundaries were set with the Dnepr (Pridneprovsk) Railroad to exclude Kamysh-Zarya and Chaplino stations and include Krasnoarmeysk; with the Krasnolimanskiy division of the Donetsk Railroad, excluding Dubovo station and including the siding at kilometer 2; and with Ilovayskiy division of the Donetsk Railroad, to exclude Mospino station and include Ocheretino and Makeyevka-passenger. [Text] [Moscow GUDOK in Russian 9 Oct 86 p 2] 9194

MOSCOW RAILROAD STATIONS MERGED--As a result of combining the stations Ochakovo-1 and Ochakovo-2 into a single station Ochakovo-1, Ochakovo-2 station has been removed from Tarif Handbook No. 4, 1975 edition. [Text] [Moscow GUDOK in Russian 4 Sep 86 p 2] 9194

NEW SVERDLOVSK RAILROAD STATION--The station on the Sverdlovsk Railroad which was built on the site of the signal box at kilometer 14 (on the Reft-17-kilometer signal box section), has been named Maloreftinskaya. It is open for operation to receive and give out freight shipments by the car or in small consignments which are loaded by the car only at sidings and non-public access sites, i.e. in accordance with Point 3 of Tariff Handbook No. 4. Maloreftinskaya station has been assigned code number 82490, and the 14th-kilometer signal box has been eliminated from Tariff Handbook No. 4. [Text] [Moscow GUDOK in Russian 13 Oct 86 p 2] 9194

NEW BAM FREIGHT STATION--Neryungri-Freight station (code #99191) of the Baykal-Amur Mainline is included in direct connection with public use railroad lines of the MPS [Ministry of Railways] on a temporary basis. It is open for the receipt and issuing of freight cargo by the car and in small consignments which are loaded by the car only at sidings and non-public access sites, i.e. in accordance with Point 3 of Tariff Handbook No. 4. The distance from Neryungri-Freight station to the adjoining Neryungri-Passenger station is 8 kilometers. [Text] [Moscow GUDOK in Russian 13 Oct 86 p 2] 9194

MOSCOW PASSENGER STOP RENAMED--The Rechnoy Vokzal passenger stop on the Moscow-Passenger - Paveletskaya - Kolomenskoye sector of the Moscow Railroad has been renamed the ZIL Passenger Stop. [Text] [Moscow GUDOK in Russian 13 Oct 86 p 2] 9194

NEW CODE FOR JUNCTION--Siding No. 315 of the West Kazakhstan Railroad, on the Kandagach - Makat sector, is open for the receipt and issuing of cargo by the car and in small consignments which are loaded by the car only at sidings and non-public access sites, i.e. in accordance with Point 3 of Tariff Handbook No. 4. It has been assigned the new code number 71550. Code number 673806 was assigned to it in the 1985 edition of Tariff Handbook No. 4. [Text] [Moscow GUDOK in Russian 13 Oct 86 p 2] 9194

WESTERN SIBERIAN STATION OPENS--Srednesibirskaya Station of the West Siberian Railroad is opening for the receipt and issuing of cargo by the car and in small consignments which are loaded by the car only at sidings and non-public access sites, i.e. in accordance with Point 3 of Tariff Handbook No. 4. It has been assigned the new code number 89070. Code number 840804 was assigned to it in the 1985 edition of the new Tariff Handbook. [Text] [Moscow GUDOK in Russian 13 Oct 86 p 2] 9194

SVERDLOVSK PASSENGER STOP OPENS--The siding on the sector between Surgut and Nizhnevartovsk-1 (on the run between Chumpas siding and Uryevskiy siding) on the Sverdlovsk Railroad has been given the name Langepasovskiy (code #83923). It is open for embarking and disembarking passengers on commuter and local trains, i.e. in accordance with symbol "0" of Tariff Handbook No. 4. The distance from Langepasovskiy siding to the transit point at Voynovka is 820 kilometers. [Text] [Moscow GUDOK in Russian 13 Oct 86 p 2] 9194

CSO: 1829/22

MARITIME AND RIVER FLEETS

MOD OFFICIAL ON LENINGRAD CHANNEL NAVIGATIONAL SAFETY

Moscow MORSKOY FLOT in Russian No 8, Aug 86 pp 52-53

[Article by Ye. Gnitsevich, department head, USSR Ministry of Defense Navigation and Oceanography Main Directorate: "For the Leningrad Fairways--Modern Navigational Equipment"]

[Text] Since the beginning of the Leningrad flood protection works' construction, a substantial amount of work already has been done. Erection of the technological dike has been accomplished in the northern sector between the village of Gorskaya and Kotlin Island, which has made it possible to establish motor-vehicle communication with Kronshtadt. Construction of floodgate [tide-gate] works V-5 and V-6 has been completed, and work is continuing on works V-3 and V-4. Construction of the southern ship-passage structure, S-1, is proceeding at full speed, and the dike is being erected in the southern sector.

In solving Leningrad's flood protection problems, the scientists and specialists have understood that these are inseparably linked to the functioning and development of Leningrad's port--the most important transport center in the country's Northwest. Therefore, special attention has had to be devoted to ensuring the port's uninterrupted operation and the navigational safety of warships and merchant ships in this region. This is particularly so because it is the first time a project of such a scale, providing for the passage of large-tonnage maritime ships through erected works, is being carried out in the Soviet Union.

Clearly, construction of the dike complicates, to a considerable extent, a navigational situation that is complicated enough even without it, especially to the south of Kotlin Island. All of this has necessitated the development of a special navigational equipment [aids] project, which envisages the construction of new and reconstruction of existing facilities that will ensure the navigational safety of warships and merchant ships after completion of the protective works' construction.

Such work was assigned to one of the Ministry of Defense Navigation and Oceanography Main Directorate's organizations, and was completed in 1980. It was considered in the work that ensuring the safety of navigation in the eastern part of the Gulf of Finland and Neva Bay [Nevskaya Guba] (shallow, and abounding in navigational hazards) presents definite difficulty, even in daytime and under normal visibility conditions. What, then, is to be said of night navigation--especially during limited visibility!

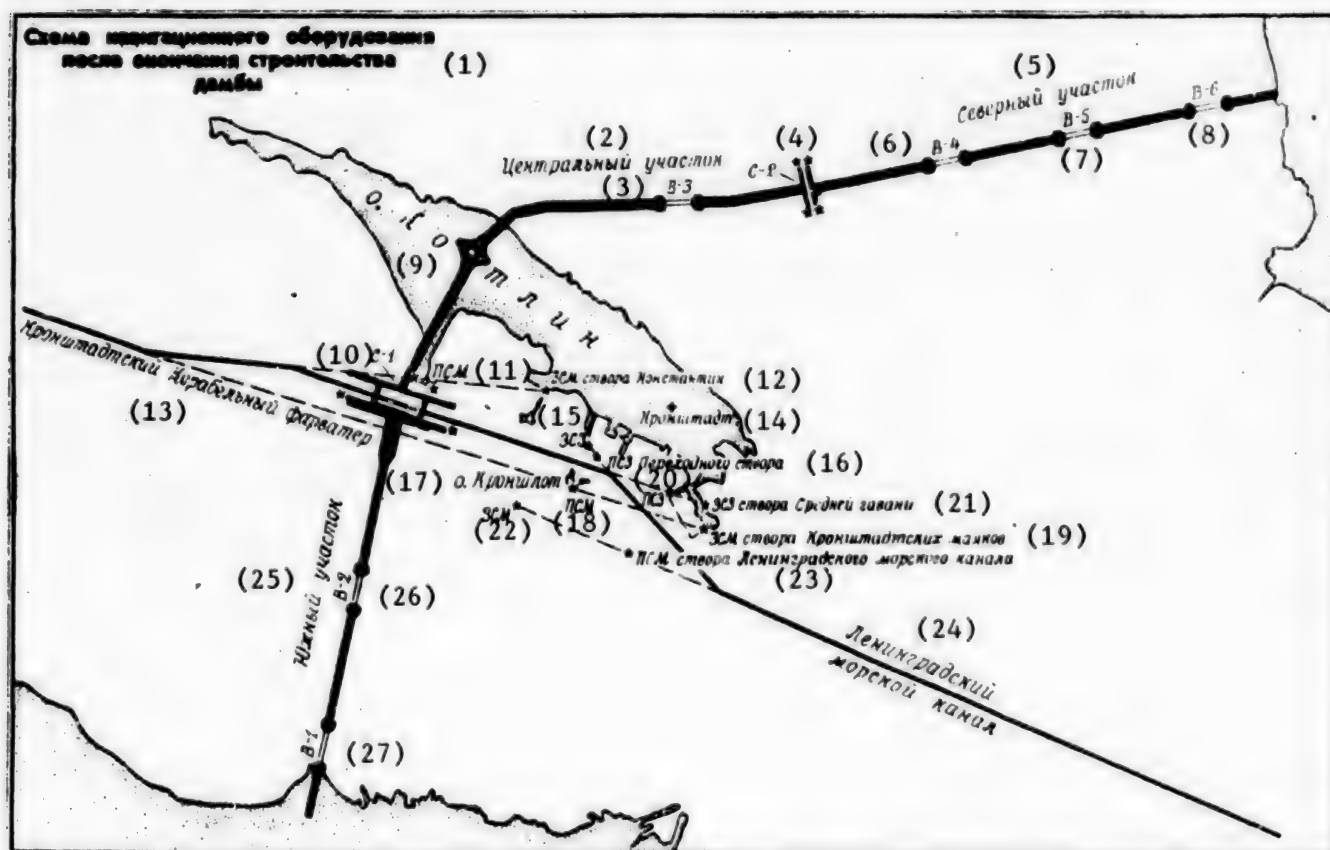


Diagram of Navigational Equipment after Completion of Dike Construction

Key:

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|--|---|
| 1. Diagram of Navigational Equipment after Completion of Dike Construction | 15. Rear range mark [light] of the transition range |
| 2. Central sector of dike | 16. Front range mark [light] of the transition range |
| 3. Floodgate V-3 | 17. Kronshlot Island |
| 4. Ship-passage structure S-2 | 18. Front range beacon of the Kronshtadt Beacon Range |
| 5. Northern sector of dike | 19. Rear range beacon of the Kronshtadt Beacon Range |
| 6. Floodgate V-4 | 20. Front range mark [light] of the Srednyaya Gavan [Middle Harbor] Range |
| 7. Floodgate V-5 | 21. Rear range mark [light] of the Srednyaya Gavan [Middle Harbor] Range |
| 8. Floodgate V-6 | 22. Rear range beacon of the Leningrad Maritime Channel Range |
| 9. Kotlin Island | 23. Front range beacon of the Leningrad Maritime Channel Range |
| 10. Ship-passage structure S-1 | 24. Leningrad Maritime Channel |
| 11. Front range beacon of Konstantin Range | 25. Southern sector of dike |
| 12. Rear range beacon of Konstantin Range | 26. Floodgate V-2 |
| 13. Kronshtadt Warship Fairway | 27. Floodgate V-1 |
| 14. Kronshtadt | |

At the present time there are quite a few navigational marks, equipped with modern light-technology devices, on the shores of Neva Bay, and the fairways and channels leading from Leningrad to sea, as well as to Vyborg, Lomonosov, Kronshtadt, Primorsk, and other points are equipped with lighted ranges and a sufficient number of floating warning marks [obstruction buoys, etc.]. The navigational hazards in this region have been examined and buoyed in detail.

Nevertheless, analysis of the individual sectors' navigational equipment has shown that both its further development and its reconstruction are necessary. This applies to the Leningrad Maritime Channel first of all. Navigation along it is supported today by two lighted beacon ranges: the Lenmorkanal [Leningrad Maritime Channel] Range and the Approach Range, as well as by seven pairs of large, year-round-navigation marine buoys. The indicated ranges have substantial defects. In the first place, their axes are out of alignment by 3.4 arc minutes. In the vicinity of the entrance to the channel's buoyed section, this disparity reaches a linear magnitude of 21 meters. Secondly, after construction of the container terminal in the port, the rear range beacon's light turned out to be obscured in the sector from the 80th to the 230th distance mark [piket].

In this connection, the Leningrad Maritime Port must construct a new range beacon no less than 73.5 meters high, with a powerful gaslight [vapor-burner] apparatus, at the head of Lesnoy [Timber] Mole. This will make it possible to support navigation reliably along the entire channel, day and night, during normal visibility.

As has been noted already, construction of the Leningrad flood protection works will bring about substantial changes in navigating conditions, especially to the south of Kotlin Island.

Passage of ships through ship-passage structure S-1 will be accomplished on the Srednyaya Gavan [Middle Harbor] Beacon Range. This range, the operating part having a length of 6 kilometers, will acquire exceptional importance, inasmuch as ships will have to pass safely through the southern gates on it. The Fort Konstantin Beacon Range also will play an important role. In addition to these two ranges, the installation of new beacons on the ship-passage structure's moles, and the illumination of the walls of these and the moles themselves are foreseen by the navigational equipment project.

To provide for the passage of ships through the northern ship-passage structure, S-2, the installation of navigational lights on the moles, and the equipping of the fairway running through them with a line of buoys are envisaged by the project.

It should be borne in mind that a motor-vehicle road, with a great number of street lights, will run along the dike for its entire length. This will create a significant illumination background, and will require the installation of powerful light sources, and the use of laser, gaslight [vapor-burner], and other untraditional devices on all navigational equipment facilities.

In the eastern part of Neva Bay, the currents caused by the Neva River's discharge are well-tracked. Their distinctive feature is that the main bulk of the river water (approximately 70 percent) passes between Cape Lisiy Nos and Kotlin Island. The average speed [drift] of these currents does not exceed 0.2 knot, and the maximum speed is about 0.6 knot. The rest of the Neva's water passes through the southern part of Neva Bay between Lomonosov and Kotlin Island. Here the current's speed is 0.1 to 0.2 knot, and, during easterly winds of force 9 to 12 meters per second [about 17.5 to 23.3 knots], the speed of the currents may reach 1.5 knots.

During the dike-construction period, a temporary redistribution of the river water discharge was observed, in result of which the speed of the currents in the fairways to the south of Kotlin Island increased to 1.0 knot, and, during unfavorable coincidings of wind directions and water driving, even stronger currents were observed. However, these decreased considerably in proportion to the activation of floodgate works V-6 and V-5 in the northern sector, and, upon completion of the construction of gates V-3 and V-4, the river water discharge will arrive at its natural level.

Nevertheless, for safe transit of the ship-passage structures by warships and merchant ships, accurate information about the hydrometeorological factors, and its strict taking into account by the ships will have great importance. First of all--about the currents in the vicinity of the gates and in the approaches to them. For this reason, the project calls for the installation of special electronic display boards, on which information about current direction [set] and speed at the tide levels [gorizonty], wind force, visibility, etc., will light up automatically every 5 to 10 seconds. With deterioration of visibility, the task of ensuring navigational safety in the area under consideration is rendered considerably more difficult.

The existing "Raskat" BRLS [shore radar station], situated on the south shore of Neva Bay, provides information to ships in the area from the receiving [priyemnyy] buoy to the buoyed section of the Leningrad Maritime Channel, and also effects radar guidance in the latter area, especially during poor visibility. However, the present BRLS will be unable to provide for safe guidance of ships in the protective works' presence. Therefore, a set of measures to ensure navigational safety after completion of the dike's construction is envisaged by the navigational equipment project: the establishment of radio-navigation systems which will provide for a ship's determination of her position, in any visibility, with an average square error of 20 meters; the installation of warship and merchant-ship automated traffic control systems and responder radar beacons [radiolokatsionnyye mayaki-otvetchiki]; the construction of new range beacons and other visual, light-technology facilities; the installation of hydrometeorological-information display boards on the ship-passage structures; and the buoying of all channels and fairways with floating navigational equipment devices, etc.

Only by carrying out all of these measures can the navigational safety of warships and the ships of all departments be ensured in connection with the construction of the Leningrad flood protection works.

A coordinating council, into which representatives of all interested departments and organizations were incorporated, was formed in 1984 under the Captain of the Leningrad Maritime Commercial Port. The council considers matters of ensuring navigational safety during the protective works' construction period and after its conclusion.

However, the main role in ensuring the safety of navigation in connection with the dike's construction belongs to the Lengidroproyekt [Leningrad State Institute for Hydrotechnical Design] as general project specialist, and the Lenzashchita [Leningrad Flood Protection Association] as general client. They are obligated to organize timely designing and constructing of the navigational equipment facilities envisaged by the approved project.

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12319

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MARITIME AND RIVER FLEETS

CHIEF ON SOVIET DANUBE SHIPPING COMPANY WORK

Kiev RABOCHAYA GAZETA in Russian 14 Sep 86 p 2

[Report on interview with Chief of the Soviet Danube Shipping Company Viktor Pilipenko by Yu. Teplyakov under the "Sketch of a Contemporary" rubric: "Fleet Engineer"; interview in Izmail, date not given; first three paragraphs are boldface introduction, and introduction is continued in next five paragraphs]

[Text] I shall begin with the fact that I just could not find the chief of the Soviet Danube Shipping Company, Viktor Pilipenko, in his office.

I telephone Izmail in order to make arrangements for a meeting, and they answer: "Right now he is in Belgrade. We expect him back in a week." I telephone after a week: "He was here yesterday. Today he left for the Romanian port of Orshova." And so it was all summer: now Ruse, now Bratislava, now Vienna, now Passau....

Finally we met in Izmail.

There are quite a few talented people in the world. There are mathematical geniuses, musical wonders, ballet virtuosos, and great singers. For some reason, indeed, we usually even define the word "talent" itself by comparison with representatives of these professions. However, if I had my way, I should establish, first of all, a school, not for sports, and not for ballet, but a school in which organizers would be trained. And I am sure that Viktor Pilipenko would, indeed, finish it with a gold medal, because this man's most striking professional feature is the rarest of talent as an organizer. True, an official document, his diploma, advises that Pilipenko is only an engineer of the maritime fleet.

He is just a trifle over 50. His best years were devoted to the Far East and the Arctic, and his youth was left on the shores of the Pacific Ocean and the expanses of the Arctic.

"But then, I acquired character there," comments Viktor Pilipenko.

He has been on the Danube since 1975. But the feeling (his admission) is one of having arrived several days ago. He has gone from the Alps to the Black

Sea dozens of times, on snow-white passenger liners, on barges, and on work-horse pusher tugs. He has experienced for himself what the river is like during spring high water, when the violent current can twist a convoy into a spiral in a minute, and hurl it onto the rocks; and during the prewinter fogs, when the vessels proceed along shallowed shoal waters, scraping the bottom. He knows both the river's present day and its history, those centuries when there was a year of war here for two peaceful years.

"Fortunately, all that is in the past," says Viktor Pilipenko. "During the 10-year period that I have been working here, I do not recall a single 'draft,' although seas and rivers are especially sensitive to changes in the international political climate. No, there was one incident after all. In 1980, an American tourist firm chartered a Soviet passenger ship, and then suddenly, well no, not suddenly, but under pressure from the White House, refused the contract. Later, getting around the official barriers, it still tried to reach agreement with us, but this time we, ourselves, refused. Why do we need such partners: today one way, tomorrow another? These are not business relations. Yes, that was the only 'gloomy' incident. And during the rest of the years, the barometer has constantly indicated 'clear' for us on the Danube."

[Yu. Teplyakov] How do you explain this phenomenon: There is a steep drop in temperature in many regions of the world, but on Europe's main street, on the Danube, it is warm?

[V. Pilipenko] When everyone is in the same boat, all have to paddle on the same side, otherwise you will be sloshed around forever amid the destructive waves. On the Danube, after the bitterest of experience to be sure, the people have understood this generally simplest of truths. The spirit of agreement, the spirit of Helsinki, was born on the Baltic Sea. But I can assure you that they treat it especially considerately on the Danube.

I shall not presume to say whose is the greater contribution here. Most likely it is that of the International Danube Commission, which was created immediately after the second world war, and which determines shipping's entire legal system and, speaking more simply, all circumstances on the Danube. Each Danube country is represented on it by an ambassador. Together, these work out the laws by which the river lives.

[Yu. Teplyakov] You judge it this way because your affairs are going superbly. However, there also are unsatisfied people. I read an opinion of the well-known West German specialist Hans (Boehme) from the World Economy Institute in Kiel. The article was rather extensive, but its main idea was as follows: Moscow's policy in regard to maritime freight carriages dictates not so much commercial goals as global political strategy. His arguments: There is a steep lowering of freight tariffs, almost below production costs--to compete under such conditions is impossible. Moreover, the Soviet fleet skims off the cream, and grabs the most profitable carriages....

[V. Pilipenko] When you make accusations, statistics are needed, and not words. Thus, quite a lot also has been said about our shipping company. Indeed, they say that our fleet is the largest on the Danube; but in fact, the largest here is Romania's, which has built a good many excellent maritime and river vessels recently.

Now let us understand the carriage volumes. Of those tens of millions of tons of freight that presently move along the Danube, 6 million metric tons are carried under the Soviet Flag. This is rather much. Under the FRG Flag, for example, there is considerably less. However, the Danube is far from being that country's most important transport highway. The FRG's economy has other connections with European States, along the Rhine first of all. Indeed, the main industrial centers also are located on its banks. The Soviet fleet's ratio to the West German is no one's caprice, circumstances dictated it.

[Yu. Teplyakov] Well, and the tariffs? They are really low indeed.

[V. Pilipenko] Neither do we shun profit, and yet, we are for reasonable rates. It is much simpler to increase prices from year to year. But if you do so, you may lose your clients altogether. It is more reasonable to find a creative way to increase your work efficiency. An example of this approach--creation of the Soviet-Bulgarian "Dunaytrans" ["Danube Transport] Society. It now carries over 5 million metric tons of freight during a year: with the same fleet, only twice as large as before. And this is due only to organizational and engineering decisions, without a single kopek of capital investments. The experience of "Dunaytrans," and it is many-faceted, was specially considered by the Council for Mutual Economic Assistance [CEMA] and recommended as an example of business relations between socialist countries.

[Yu. Teplyakov] They told me that the "Dunaytrans" idea was born in the office of the chief of the Soviet Danube Shipping Company....

[V. Pilipenko] Ideas are prompted by circumstances. The merit is not great in recognizing them. It is just necessary to look ahead more often....

Look ahead, and try to discern the future. That is the principle of the thing. Now, for example, I have proposed expanding the sphere of activity of the already well-known Danube "Interlikhter" ["International Lighter Society]. Meanwhile, not everyone, by far, greets these proposals with delight: Why disturb a good thing? And from a distance they may seem right. "Interlikhter" was born in December 1978. Its organizers--Bulgaria, Hungary, the USSR, and Czechoslovakia--contributed its initial capital of 65 million rubles in equal shares. From its very first year, contrary to the West's predictions, "Interlikhter" has brought in profit regularly. Thanks to it, the Danube socialist countries entered the World Ocean.

How is "Interlikhter" attractive? In the first place, there is the reliability and quality of freight delivery. In the second, there is time: By comparison with the former route from Budapest to Bombay in the customary ships, a charterer gains up to 4 weeks. The popularity of this transport organization of the socialist states is growing. The profits also are growing.

The enterprise's council, and it consists of four persons (one from each country), made a decision: not to divide the profit of the first 5 years, and to build a ship repair plant [yard] with the money. We had thought about this yard even before, [author inserts: "says Pilipenko,"] but there was no money. And now there is. There also is money for other purposes. My opinion--our joint enterprise needs to be expanded. Why divide the income, when even more can be earned?

[Yu. Teplyakov] So, again the future?

[V. Pilipenko] That is it exactly. Being without a future is like being without wings. We have a future, both at sea and on the river. Plans exist to connect the Danube, not only with the Rhine, but also with the Elbe and Oder Rivers. Then almost all European capitals will be as if on one street. Is this not tempting, especially for trade? That is where the real future is....

[Yu. Teplyakov] I often recalled Viktor Pilipenko's favorite word, "future," when I was going upstream on the river aboard a Soviet ship and, when really close at hand, I could see the Danube, which seemed to me an escalator, constantly moving for almost 3,000 kilometers, along which ships ever hurry, day and night, from the Black Sea to the Alps.

12319

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MARITIME AND RIVER FLEETS

NEW VESSELS FOR NOVAYA LADOGA FLEET

Moscow VODNYY TRANSPORT in Russian 1 Nov 86 p 1

[Article by Ye. Tarasova under the "Navigation-86" rubric: "With Full Holds"]

[Excerpts] The fleet of the Northwestern [River] Shipping Company's Novaya Ladoga Ship-Repair Plant [Yard] is being augmented with new vessels. New, more powerful and modern, dry-cargo vessels are arriving to replace the old motor ships constructed in the 1950's. The acceptance of yet another vegetable carrier [ovoshchevoz], the ST-1321, intended for Novaya Ladoga's river transport workers is just being concluded now at the Volgograd Shipbuilding Plant [Shipyard]. The young, but experienced Captain-Mechanic R. Bagirov is conducting the acceptance.

"The motor ship has improved placement of the pilothouse and living accommodations in comparison to previous vessels of this series," says the plant's [yard's] chief engineer, V. Pegov. "In this instance, the designers and builders have departed from the classical version. Here, the pilothouse and the staterooms are located on the bow; that is, at maximum distance from the engine room, which is located at the stern. And this means that noise and vibration have been reduced. The control console [pult upravleniya] also has been brought out to the bow. The crew will work by the no-watches method."

"The vessel is equipped with powerful refrigeration units, and thus preservation of the vegetable cargo is guaranteed during a voyage. The new "esteshka" ["ST-series vessel"] will help the Novaya Ladoga vegetable carriers, the number of which has reached eight at the plant [yard] today, achieve even greater successes in carrying out the country's Food Program, and in supplying Leningrad and Moscow with vegetables and fruits."

During the present navigation [shipping season], over 2,500 metric tons of Astrakhan tomatoes and about 800 metric tons of watermelons have been delivered to docks [wharfs, quays, or piers] of the Leningrad port's freight district by Novaya Ladoga vessels. Carried to Moscow have been 1,352 metric tons of tomatoes and 670 metric tons of melons. And in this, the contribution of the new dry-cargo vessels, the freight capacity of which is almost three times as great as the old, was no small one.

But 31 vegetable-carrier vessels of the Northwestern Shipping Company, in all, took part in transporting melons and pumpkins this summer and fall. Of these, five were the new-construction motor ships. In all, the Northwestern Shipping Company's dry-cargo motor ships carried over 16,000 metric tons of tomatoes. The new fleet accounted for about 4,000 of these.

MARITIME AND RIVER FLEETS

MARITIME FLEET LACKING ANTICORROSIVE PAINTS

Moscow VODNYI TRANSPORT in Russian 1 Nov 86 p 2

[Article by VODNYI TRANSPORT special correspondent V. Bezuglyy: "To Minister of the USSR Chemical Industry Yu.A. Besspalov's Attention: The Kind of Arithmetic"; first paragraph is boldface introduction]

[Text] Maritime ships placed in dry dock after long and difficult voyages have an unsightly appearance. The pounding of the waves, the moist winds, and the salt water have done their "rusty" deed. The metal--once again has turned out to be helpless before its age-old, most dangerous enemy--corrosion. The defense against it is one of the global problems of modern times. It also is conducted in the fleet. And it is very expensive: The Minmorflot [Ministry of the Maritime Fleet] alone annually spends tens of millions of rubles!

In the country, there are the mighty fishing fleet, the river fleet, and the scientific research fleet of other departments. And all of them pay tribute to rust--hundreds of millions of rubles!

Nevertheless, the ships go to sea freshly painted. With what do they protect the hulls from corrosion in the Minmorflot today?

During recent years, they have been applying ethenyl lacquer [lak-etinol] as basic component of the anticorrosive coating for a ship's underwater section at the SRZ's [ship repair plants [yards]]. It is not particularly durable, but there has been nothing else in the country up to now. This lacquer is a by-product (by!) in producing chloroprene rubber products, and is put out only at the "Nairit" NPO [Scientific Production Association] in Yerevan.

At the end of the 1970's, the USSR Ministry of the Chemical Industry advised the Minmorflot that "Nairit" soon would discontinue putting out the lacquer in connection with a change in the production process. In the gentlemanly relations of partners, it is customary to advise what will be provided instead. Nothing of the sort happened. The chemists confronted the seamen with a fact.... The seamen became alarmed, and began knocking on all doors.

They knocked for a year, another, a third.... But the chemists pretended they didn't hear, and only now and then turned on their well-tuned paper merry-go-round. And "business" papers, but more simply--meaningless responses, flew to various departments.

But then, in mid 1984, the Minkhimprom [Ministry of the Chemical Industry] seemed suddenly to remember. Written assurance arrived at the Minmorflot that, at long last, production of anticorrosive paint KhS-413 [possibly XC-413] and the base for it, VL-023, was being instituted to replace the ethenyl lacquer [lak-etinol]. The seamen rejoiced, and turned at once to the Gosstab [State Committee for Material and Technical Supply] and the Minkhimprom with the request that provision be made for supplying these chemical products in the necessary quantity in 1985.

They rejoiced too soon. It became clear at the beginning of 1985, speaking bluntly, that they simply had been deceived. The chemists had never allocated funds for the new lacquer-paint [lakokrasochnyye] materials.

It would be naive to suppose that they do not know in the Minkhimprom that the lack of domestic anticorrosive paints will have a negative effect upon the technical condition of expensive maritime ships, and will worsen their technical and economic indices substantially. True, what is needed can be purchased abroad as a last resort. But this, indeed, will lead to substantial currency outlays, which are highly undesirable.

Is it permissible here to ask: And what really is the Minkhimprom's true "last resort" in this important matter? And aren't you looking for the guilty parties in the matter? And that the chemists do all that they are supposed to do? No, no, and no! There is just one reason: The chemists messed up their own planned assignments, and did not resolve the matter of establishing production of the raw materials necessary to support the output of the new lacquer-paint [lakokrasochnyye] materials in quantities meeting the shipbuilding and ship-repair requirement. This, by the way, was written about frankly in ministerial order No 740 of 4 November 1985.

However, the end of 1986 is on the calendar today. What has changed at the Minkhimprom enterprises?

At long last, the chemists have mastered production of enamel KhS-413 [possibly XC-413], and even begun to supply it to the seamen. True, this enamel cannot be used without its base, VL-023, for these are parts of a whole. But, according to fresh information, its production still has not been arranged.

The readers may ask us: Is it worthwhile to talk about this so much? It is worthwhile!

The crux of the matter is that, according to a TsNIIMF [Central Scientific Research Institute for the Maritime Fleet] report, the aforementioned "new" lacquer-paint [lakokrasochnyye] materials--are the day before yesterday's. They were developed...over 10 years ago, and are in two mutually dependent components. It is clear that the SRZ's will experience great difficulties with the uncombined supplying of these. And more: production of the paints is taking place with violation of their technical conditions, and this lowers their quality.

However, all of this is just the tip of the iceberg.

While our domestic chemical industry is working with 10-year-old materials, truly new and effective paints--self-cleaning [samopoliruyushchiyesya, literally "self-polishing"] and ice-resistant [ledostoykiye, literally "ice-durable"]--appeared abroad several years ago in a wide assortment. They have good anticorrosive properties, and are very active against fouling growth. They are superior to our "very newest" paints by an order of magnitude and, perhaps, even two. Will our seamen, maybe, soon receive their likes as well? Alas, the production of domestic ice-resistant paints is planned by the Minkhimprom in 1989, and that of the self-cleaning...in the 13th Five-Year Plan.

That is how things are. Instead of speeding up production of these paints in all possible ways, a "business paper" merry-go-round once again is being set in motion at the Minkhimprom. And it may be reported with complete confidence that the sad story of lagging behind the best foreign examples is beginning to be repeated. Only this time with even worse consequences for shipowners and the country as a whole.

The lack of such essential self-cleaning and ice-resistant paints is equivalent, in the Minmorflot alone, to an annual loss of a million metric tons of standard fuel, or 35 million rubles. But, indeed, in addition to the MMF [Ministry of the Maritime Fleet], as we already have said, there are other shipowners in the country as well, who also very much need these paints. It is stretching the point greatly, but let us assume that the Minkhimprom provides the needed paints to the seamen in about 5 years. We make a calculation, and obtain: fuel--5 million metric tons, rubles--175 million. And these losses are just the Minmorflot's.

If one takes the other shipowners into account as well, these figures (5 and 175) must be multiplied at least by 4. In total--20 and 700 million, respectively. That is the kind of arithmetic....

As is well known, self-cleaning and ice-resistant paints appeared abroad about 15 years ago. So, let the readers themselves calculate the real losses from the Minkhimprom's sluggishness.

Self-cleaning paints are replete with special biological additives, and keep their active effect against fouling growth until the sea water washes away the paint down to micron thickness.

In addition, self-cleaning paints reduce the roughness of a ship's hull in the process of its movement, which leads to a substantial saving of fuel. On the average, this saving amounts to 10 percent, and sometimes 14 and over, for one ship.

Dozens of ships painted, mainly abroad, with imported self-cleaning paint already are operating in the Minmorflot system. And almost all of them have no fouling growth after 2 or 3 years of sailing, and yield a 10-percent saving of fuel.

However, it must be noted that applying self-cleaning paints--is a very expensive measure, and it requires high skill in the work, particularly in the thorough scraping clean of the hull. And, although the cost of such painting is five to seven times as much as the usual, you know its benefit. Taking this into account, it is most profitable to use self-cleaning paints only on those ships that have a large fuel expenditure, a large area of underwater hull surface, and great lengths of voyages. As for the merits of the ice-resistant paints, they, too, provide a saving of fuel, amounting, on the average, to 7 percent. They also protect the hulls of icebreakers and ice-class ships well from hull-fouling growth. The paint lasts 4 years on these ships, and a minor touch up is required only after 2 years (during dry docking).

That is why, as early as 1979, the Minmorflot, jointly with interested ministries, addressed an appropriate letter about developing and organizing [production of] domestic self-cleaning and ice-resistant paints to the GKNT USSR [State Committee of the USSR Council of Ministers for Science and Technology], the Minkhimprom, and the USSR Gosplan [State Planning Committee]. The seamen also proposed convening a meeting of responsible representatives of the ministries and departments. But without result....

Where is the way out of the situation that has been created with the paints, and is there one?

It is to be seen in the fact that the Minkhimprom's new management will try to shorten the prolonged lagging behind. Difficult? But essential!

A general task now has been set before all sectors of industry--to put out products, not only on a par with world standards, but even above these. And to do this with the requisite expedition, and not spend two five-year plans on developing and producing paints. It is necessary to learn to count the people's money.

12319

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MARITIME AND RIVER FLEETS

LIGHTER OPERATING PROBLEMS IN FAR NORTH

Moscow VODNYI TRANSPORT in Russian 6 Nov 86 p 2

[Article by V. Shirmanov, economist, under the "Transport Technological Systems: Experience and Problems" rubric: "Once More About the Lighter Carrier"; first paragraph is boldface introduction]

[Text] During the 1986 navigation [shipping season], a system using the lighter carrier [LASH ship] Aleksey Kosygin was activated for carrying freight to points in the Far East and Far North. As was reported in "VT" ["VODNYI TRANSPORT"] on 5 June 1986, shortcomings already have been discovered in the ship's operating process, and omissions and difficulties have been noted.

Delivering goods in lighters is not simply a progressive technological method, it is a complex transport technological system. It embodies a complicated network of interrelations and interdependencies of Glavflot [Shipping and Operation of the Fleet and Ports Main Administration], V/O "Mortekhsudoremprom" [Shipbuilding and Technical Operation and Repair of the Fleet All-Union Association], the PVFU [Planning and Currency Finance Administration], the shipping company and the ports, the lighter carrier's crew, and an extensive network of cargo shippers and receivers.

The main burden falls, naturally, upon the Glavflot. Further scientific study of arising and unresolved questions is within its purview. There is talk of improving the organization for managing carriages on lighters, organizing feeder servicing, and providing towing means. However, the existing normative base, which regulates the system's operation, does not take into account all of its potentials and the organization of the transport process in the interests of the carrier, the shipper, and the national economy as a whole.

It is surprising that the equipment questions, which grow into problems, are not resolved by the V/O "Mortekhsudoremprom", from which the DVMP [Far East Shipping Company] has a right to expect substantial assistance. It seems to me that providing the lighter-carrier system with a sufficient number of lighters is certainly by no means the least important matter either.

The questions of providing towing means, and the problems of dropping off and receiving lighters and eliminating the many hours of document preparation, also remain equally critical.

Simple logic suggests that the lighter carrier's standing time in a port should correspond, for all practical purposes, to her technological timing data [taktiko-tekhnologicheskiye dannyye] for ensuring the dropping off and receiving of lighters. There is no other, additional time for her. Those who engage in her operation should proceed on this basis. In Soviet and foreign shipping practice, there are examples in which special documents are used to lighten the paper work and expedite a ship's processing in port. There is even a practice in which an agent of the shipowner receives the freight himself, and then issues it to the recipient.

I think that both the PVFU and the Glavflot, as well as the shipping company itself, have at their disposal, not only such examples, but also the appropriate documents, which long have awaited their introduction into practice. It is difficult, just now, for the Far East Shipping Company to resolve the whole complex of questions independently. In the current circumstances, at the same time, lighter carrier Aleksey Kosygin's operation under the Far East Shipping Company's direct contracts with freight owners is precisely that opportunity for clear-cut shaping of the shipping company's relations with shippers which is required for providing the shipping company's fleet, as a whole, with goods in the near future.

This applies, as well, to the matter of the shipping company's increasing the intensiveness of its fixed capital's utilization. Precisely the lighter-carrier system will permit high-quality working out of all the details for fulfilling one of the shipping company's primary tasks--supplying the regions of the Far East and Far North--and increasing the fleet's productivity in these carriages.

Therefore, it is necessary to have calculations of the permissible number of lighters which may be left in the ports that freeze over. A precise schedule for coordinating the lighters' readying times with the ship's arrival in port is needed. The socio-economic basis for the people's normal work and the precise linkup of the cargo with the transport means must be embodied in it, and the reserves for increasing the lighter-carrier system's effectiveness specified. Thus, today already is the time to think about introducing the Lighter-Carrier System Automated Management System.

It would be able to render substantial assistance in the making of proper decisions for increasing the economic effectiveness of lighter-carrier shipments to the ports' and shipping company's operational organizations, and to the lighter carrier's crew, taking into account a region's specific features, weather conditions, capacities of its ports to handle lighters, possible feeder servicing, information on lighter readiness for shipment in the ports, and other data comprising the data base.

Why, for example, are the Soviet Danube Shipping Company's lighter carriers operating successfully? It is because their activity is built upon profound scientific and practical working out of all questions. There, there is a council composed of officials of the SDP [Soviet Danube Shipping Company] and

the management of the International Shipping Enterprise "Interlikhter" ["International Lighter"], there are specific responsibilities of parties, and there are economic incentives that regulate the parties' interrelations. Why does not the Glavflot, jointly with the Far East Shipping Company, take advantage of the experience that already exists?

Under the conditions of the far eastern region and the Far North, considering their port capacities and geographical circumstances, development and improvement of the lighter-carrier system unquestionably is the future direction for optimum solution of the problems posed by the 27th CPSU Congress.

12319

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MARITIME AND RIVER FLEETS

PLANS FOR 'MORUSLUGI' UMBRELLA PORT SERVICES ORGANIZATION

Moscow VODNYI TRANSPORT in Russian 23 Sep 86 p 2

[Article by M. Robkanov, chief of the Vladivostok Maritime Commercial Port, under the "Problems and Discussions" rubric: "Is the 'Moruslugi' Firm Inevitable?"; first paragraph is boldface introduction]

[Text] Upon the ship's arrival, the agent of the "Moruslugi" ["Maritime Services"] service of the Vladivostok Maritime Commercial Port's main dispatching office was first to climb aboard. The captain greeted him cordially, for now the small crew would be freed of all kinds of worries ashore. The seamen have heard quite a few kind words about the new firm's service, but they want to get the details firsthand: What is the "Moruslugi" service? What brought its creation about? On what material base does it depend? How is it financed, and to whom is it subordinate?...

The readers have guessed, of course--so far, the incident is imaginary. The discussion concerns a proposed system for organizing the maritime fleet's servicing in Soviet ports.

Ship loading/unloading traditionally is considered a task of the ports. The remaining concerns rest officially upon the Service for Servicing the Transport Fleet (SOTF), or, as it still is termed in the old way, the "Transflot." However, even superficial analysis shows that 70 percent of the SOTF's services are performed by the port's forces. In this there is a fundamental contradiction, which demands quick resolution. Indeed, the one organization is responsible for the fleet's servicing, while the other, having no responsibility whatsoever, carries it out. Moreover, it is natural that the port consider its own interests the most important, and no economic incentive capable of making it improve the quality and quantity of the compulsory service exists.

It is simple to solve the problem officially--transfer the planning, executive functions, and responsibility into the same hands. Duplication is precluded, and the intermediate management element is eliminated. In the final analysis, the servicing becomes less expensive. And all that has been said logically accords with the decision to reduce the numerical strength of crews.

The administration, the partkom [party committee], the profkom [labor union committee], and the port's VLKSM [All-Union Leninist Communist Youth League] committee, having carefully studied the situation, proposed transferring the DVMP's [Far East Shipping Company's] "Transflot," less the cargo control department, to the port at full strength.

We plan to solve the fleet servicing problem in two directions at the same time. The first--creating, systematizing, and improving the work of the port services and the other organizations providing services (the SMTO [not further identified], the TMT [not further identified], personnel, transportation, and the cargo-transfer groups). The second--organizing a main dispatching office, which will coordinate all fleet servicing and take action on behalf of the crews. The service must include shift [watch] dispatchers having a separate radio facility [radiotochka]. These will be subordinate to the chief of the port dispatcher watch. The service also must include ship agents, working on the "specific ship - specific agent" principle for the entire servicing period.

Here is a sample outline of the servicing. Having received the captain's advice concerning the estimated arrival time and necessary services, the chief dispatcher of the port's "Moruslugi" service (or his deputy) assigns a specific agent to the ship. The agent (who may service three or four motor ships simultaneously) coordinates a plan of actions with the port's and shipping company's interested organizational elements, and awaits the arrival.

Upon the ship's arrival, the agent, having assembled the commission necessary in this case, decides all arising issues with the captain. His communication with the crew is effected through the "Moruslugi" service's dispatcher. The agent's presence on board is mandatory during delivery of supplies. After the end of the ship's processing in the port, the agent closes out the time sheet, and presents a bill to the captain for the work performed, which will serve, in the future, as the basis for settlement with the shipping company. The captain puts an evaluation of the servicing right on the bill, which will have an influence upon the raising or lowering of the tariffs [rates] for the servicing.

How can the service be improved qualitatively and quantitatively? Reliable communication is important. Therefore, we are taking vigorous steps to equip the port fully with telephones and install telephone facilities [tochki] on the docks [piers, wharfs, or quays]. We shall complete the work in March 1987. It is intended to assign two telephone numbers and direct telex [telephone exchange] communication to each ship. The ship will be authorized to conduct brief, private conversations through the switchboard from the harbor.

Upon completing the arrival formalities, the "Moruslugi" service will be able, at the seamen's request, to furnish a bus directly alongside (the shipping company must assign the transportation). The captain, having taxi tickets (this proposal requires a decision), will be able to request one at any time for official trips. Information about ships' positions is provided to seamen's families today in the SOTF information office. It is more logical to use the maritime terminals' information office for this purpose.

Supply delivery to the ships is a painful procedure, both for the seamen and the shore workers. Having created a supply assembly center in the port, we are solving this problem with the agents' and dock workers' assistance, and this with mandatory distribution of supplies by storage areas. The turning in of secondary raw materials [vtorsyrya], especially scrap metal, is a touchy

matter in the fleet. And it is easier to pull this "nail" within the port's purview. Harbor carriages under the SOTF's purview are provided by 10 harbor craft with a 4-percent running-time coefficient. Moreover, the port also assigns a fleet for these same purposes. Naturally, it is sensible to concentrate all of this tonnage in the same hands also.

It is difficult, just now, to predict absolutely accurately all of the plusses and minuses of the proposed reorganization. One thing is clear, it will not get worse, as they say, and we shall obtain room for improving fleet-shore cooperation. The port workers' worries will be increased, but we are prepared to take on the heavy load if they will support us in the Far East Shipping Company and the ministry of the Maritime Fleet.

12319

CSO: 1829/14

MARITIME AND RIVER FLEETS

MARITIME FLEET NAVIGATION, COMMO EQUIPMENT FAULTED

Moscow VODNYI TRANSPORT in Russian 23 Sep 86 p 3

[Article by V. Vorontsov, chief of the Caspian Shipping Company's Base Electrical and Radionavigation Office, under the rubric "The Problem Demands Solution": "'Nayada' Requests Assistance"; first paragraph is boldface introduction]

[Text] Our fleet is being augmented with new ships equipped with modern technical means of navigation (TSS) and communication (S). This is a natural process. The scientific research institutes and design bureaus constantly modernize their products. And this, too, is natural. However, further TSS and S development, paradoxical though this may be, confronts the operators with many problems.

An unchanging demand upon equipment is reliability in operation. This is a general rule, and there can be no exceptions here--not in radio electronics either.

For example, the "Bark" radio transmitter contains 263 mechanical relays, and each of them is a potential source of unreliability. Therefore, we should welcome a reduction to the minimum number of relays through the use of semiconductor switching devices.

Simplicity of repairing sets that have gone out of order also should become an essential requirement. But major problems also arise here. Let us take, for example, such sets as the "Korvet" and "Bark." These, although put out by the same plant, nevertheless are not standardized, and so their parts are not interchangeable. Why? So there will be more trouble during repair?

Or, there is this problem: Upon modification by the manufacturing plants, the TSS and S new-modification modules do not fit models previously put out. To what does this lead? On the one hand, the old models, not having been operated for the prescribed periods, are not subject to being written off, and, for all practical purposes, continue in service. On the other hand--their repair is made difficult because these are "obsolete" sets, "withdrawn from supply," and spare parts for them are not forthcoming.

I shall cite an example: A plant put out radar sets of the type "Nayada-2" and "Nayada-3." Their modules are interchangeable, and this is excellent!

The sets are in operation on the tankers Sergey Kirov and Ali Bayramov ("Nayada-2"), and on the ferry Sovetskiy Uzbekistan ("Nayada-3"). But, lo and behold, the "Naryada-5" set, of entirely different design, has been installed on the ferry Sovetskiy Kazakhstan of the very same series, as well as on ferries of the Sovetskiy Dagestan class.

What is the result? For one and the same kind of instrument, put out in one and the same plant and operated on ships of one and the same shipping company, the modules do not fit together....

The same may be said of VHF [UKV] radio sets of the "Reyd," "Reyd-2," and "Reyd-1M" types, and "Chayka" and "Chayka SM" shortwave sets.

All of this creates great difficulties in furnishing spare parts for the sets, and in organizing their repair, especially operational repair during the brief stops of ships under Caspian coastal-shipping conditions.

Having equipped an artillery regiment with guns of different calibers, no one would permit supplying the guns with projectiles of just one caliber. For us in the maritime fleet, this is possible. Here is proof of that. The radar sets of the "Okean," "Okean-S," and "Okean M-14" type have three different sets of spare parts, and so mutual assistance again is precluded. A difficult situation also is created in the event of malfunctions in radar sets of the "Pechora" type installed on the tankers Viktor Tarasov and Lyubov Shevtsova. There are practically no spare parts for them, and what the manufacturing plant issues as an enclosure with them obviously is insufficient.

Ships should be equipped with modern TSS and S, capable of serving for 10 to 12 years each, on the basis of superior operational reliability and extensive interchangeability of systems, subassemblies, modules, and parts, and on the basis of deep technical thought.

12319

CSO: 1829/14

MARITIME AND RIVER FLEETS

BRIEFS

NEW RO-RO TRUSKAVETS--The state flag will be hoisted on the new motorship Truskavets. This is the sixth ship of the Astrakhan ro-ro type obtained by the Baltic Shipping Company from GDR shipbuilders. After formal acceptance at Rostock, the Truskavets will make two short runs, Bremen-Leningrad, to get large-diameter pipes for construction of main gas pipelines. The Truskavets will then depart for its first ocean run to United States ports. The Truskavets will be commanded by the experienced Baltic Captain N. Loginov. [By VODNYI TRANSPORT correspondent] [Text] [Moscow VODNYI TRANSPORT in Russian 25 Oct 86 p 1] 12151

BAKU SHIPYARD EXPANSION--Baku--The Kasparsudremont Construction Association at the Shipyard imeni Vano Sturua is completing the development of blueprints and estimate documentation on technological equipment for construction of passenger pleasure crafts, design 14290, developed by the Black Sea TsPKB [Central Planning and Design Bureau]. Part of the documentation has been turned over to the shops. In connection with the new orders, there is to be an increase in the yard's production capacities and specialization through modernization and expansion. For example, lengthening the yard's northern quay water area will increase the harbor wharf for the yard. There are also preparations to reequip the slip groundways: friction-resistant materials will be used instead of the fittings used here to launch the ships. [By VODNYI TRANSPORT correspondent M. Berchiyan] [Text] [Moscow VODNYI TRANSPORT in Russian 25 Oct 86 p 1] 12151

NORTHERN SHIPPERS RECEIVE ICEBREAKERS--Arkhangelsk--The Northern Shipping Company fleet has been supplemented by two more icebreakers. The Dikson was turned over from the Murmansk Shipping Company and the Kapitan Kosolapov--from the Azov Shipping Company. The new addition will considerably expand the potentials of the Arkhangelsk Port and will make possible more reliable provision of transport operations at iced-up berths. [By VODNYI TRANSPORT correspondent] [Text] [Moscow VODNYI TRANSPORT in Russian 4 Nov 86 p 1] 12151

NEW BULGARIAN-BUILT TANKER--The Burgas ship builders have marked a new labor victory. The next 5000-ton tanker of the Kaspiya type, designed for the Soviet maritime fleet, was launched at the berth imeni I. Boyadzhiev. The ship is named after Nikolay Kozhev, a sea-going captain who perished heroically in the line of duty. [Text] [Moscow VODNYI TRANSPORT in Russian 4 Nov 86 p 1] 12151

NEW RO-RO KOMPOZITOR RAKHMANINOV--Odessa--Another ro-ro has augmented the family of specialized ships of the Black Sea Shipping Company. This ship, of the Kara Karayev type, was constructed at the Neptune berth of Rostock on an order from the Soviet Union. It was named for the Russian composer Rachmaninov. The Kompositor Rakhmaninov is among the Ro-8 type vessels, and is highly automated. In contrast to the Ro-30 and Ro-60 ships, equipment is loaded by means of two lifts with a load-lifting capacity of 40 and 50 tons. They are installed between the decks. This system makes possible more efficient use of the ship's loading areas. The suspended deck for transport of passenger motor vehicles serves this purpose. The ro-ro completed its first run from Rostock to Odessa with a cargo of metal structures for the Port of Yuzhnyy. This is the first chapter in the history of the crew, which is headed by Captain A. Lyashenko. The Kompositor Rakhmaninov will serve the line connecting Soviet and Bulgarian ports. [By A. Bondareva] [Text] [Moscow VODNYI TRANSPORT in Russian 4 Nov 86 p 1] 12151

NEW RO-RO AKADEMIK GORBUNOV--Leningrad--Five ro-ro ships built by Polish shipbuilders on order from the Soviet Union are operating successfully, with good economic efficiency, at the Baltic Shipping Company. At the shipbuilding berth imeni V.I. Lenin, the USSR state flag has been hoisted on a new ship of this series, named the Akademik Gorbunov in honor of Nikolay Petrovich Gorbunov, participant in the Great October Socialist Revolution and Civil War, eminent Soviet scholar in the field of chemical sciences. The Ro-30 type ship is convenient for operation in that it makes it possible to use advanced methods of cargo-processing by means of the flooring through the sloped stern ramp, which is let down to the berth. The new motorship is designed for transport not only of wheeled equipment and cargoes, preliminarily laid out on rolling trailers, but also of containers. It takes on board 879 twenty-foot international standard containers. [By VODNYI TRANSPORT correspondent V. Yeliseyev] [Text] [Moscow VODNYI TRANSPORT in Russian 6 Nov 86 p 2] 12151

ESTONIAN ICEBREAKER FERRY--Tallinn, 7 Nov--On the eve of the Great October holiday, the new icebreaker ferry Akhelayd, with a route between the Estonian mainland and Kihnu Island, made its first runs. It is to cross the 28-mile stormy bay five or six times a day. The new ship, built by the Riga Shipyard, is able to transport up to 200 passengers and over 40 passenger vehicles or 15 powerful KrAZ trucks per run. During the 90-minute crossing, the passengers are in a comfortable lounge, with a cafe-bar at their service. The ship easily withstands five-point waves. This is the third icebreaker ferry of the new type, ensuring connection with the Estonian islands. The marine workers transport most of the passengers and practically all the necessary materials and commodities for the island residents. [By a PRAVDA correspondent] [Text] [Moscow PRAVDA in Russian 8 Nov 86 p 6] 12151

FINNISH-BUILT CABLE LAYER--The Kem--that is what they call the new ship turned over to Soviet seamen by the Finnish shipbuilders. It was built at the berths of the Wartsila Company on an order from the Sudoimport Foreign Trade Association. The Kem will be used to lay cables in the coastal areas of the Far East. Its design took into consideration the special features of the region where it will be in operation. It is the third ship of this type supplied to the USSR by Finnish shipbuilders. [Text] [Moscow VODNYI TRANSPORT in Russian 13 Nov 86 p 1] 12151

VOLGA RIVER-SEA SHIP TRIALS--Gorkiy (TASS)--The lead ship of the Volga class, built by the Krasnyy Sormov ship builders, has set out on trial runs. These dry-cargo ships of the river-sea type are replacing ships of the preceding Sormovskiy series. The Volga can transport almost 2000 tons more cargo, and the sailing range is doubled. [Text] [Moscow VODNYI TRANSPORT in Russian 13 Nov 86 p 1] 12151

MULTIPURPOSE SHIP GRIGORIY KOZINTSEV--Odessa--The multipurpose ship of the Black Sea Shipping Company, the Grigoriy Kozintsev, has set off on its first run. It has augmented the flotilla of ships named for famous film directors. The Roman Karmen is already operating in the Black Sea Shipping Company transport fleet, and in the Soviet Danube Shipping Company--the Sergey Vasilyev and the Georgiy Vasilyev. The ship is named in honor of Grigoriy Mikhaylovich Kozintsev, famous author of many films, national artist of the USSR and winner of the Lenin and State prizes. Colleagues of the director and his wife V. Kozintseva attended the raising of the USSR State Flag. [By A. Bondareva] [Text] [Moscow VODNYI TRANSPORT in Russian 13 Nov 86 p 1] 12151

CASPIAN FERRY SOVETSKAYA NAKHICHEVAN--Baku (TASS)--When the motorship Sovetskaya Nakhichevan appeared at its port of registry, the ferry fleet of the Caspian Shipping Company was completed. The new ferry, just as its seven predecessors, was built at Yugoslavian yards. Its seagoing qualities were rated "excellent" by the crew during the ship's ferrying from the Adriatic to the Caspian Sea. The navigation instruments, operating automatically, ensure safety for marine voyages. Comfortable cabins, a discotheque and a playroom for the youngest passengers are at the passengers' service. The expansion of the ferry transports is above all linked with their degree of economy and speed: the need for additional cargo handling at the port is superfluous. Two ferry lines are now in operation on the Caspian. Another one linking Baku with the port of Bekdash in Turkmeniya will be put into operation this year. [Text] [Moscow VODNYI TRANSPORT in Russian 13 Nov 86 p 1] 12151

ORE CARRIER BORIS GORDEYEV--Nikolayev (TASS)--The shipbuilders of the Nikolayev Okean Yard turned the large ore carrier Boris Gordeyev over to the Odessa seamen. The ship is capable of taking on board 50,000 tons of bulk cargo--ores, grain and coal. The ship's modernized power unit will make it possible to consume 1200 tons less fuel yearly than the other ships of this class. Such economical ships will constitute the yard's basic production in this five-year plan. [Text] [Moscow VODNYI TRANSPORT in Russian 13 Nov 86 p 1] 12151

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